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Ambroise Paré demonstrating his use of the ligature in an amputation. From an engraving after a painting by Louis Matout. (Courtesy Cleveland Medical Library Association.)

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Editorials

A LICENSE TO PRACTICE

ONE CAN'T do much in this world without a license, except write. Do you wish to vend fruit, cut hair, or pick at foot callouses, there is always a board who for a fee will pass upon your qualifications. Every legislative assembly is jammed with bills providing penalties for anyone doing anything for the public for money, except under close and sometimes vicious supervision. Medical licensure, for more than half a century, has been a fact in most states of the Union. With the foundation of the National Board, the practice of medicine became standardized, and now one may expect as good service in Idaho as in Philadelphia.

It has been a long uphill pull, this guarantee of good medical service, and there are always those who stand ready to tear down the safeguards on one plea or another. No doubt moral standards existed in many places before legal ones were put up, but it is interesting to go back some 400 years to the time when were made the first efforts at licensure.

In the sixteenth century, medical practice was in a manner systematized and there were three recognized orders, the physicians, the surgeons, and the barber surgeons. Each had its acknowledged rights and, moreover, a line existed across which another order might not step. In the case of the physicians who by the way were not permitted the luxury of bleeding a patient, the ability to converse in Latin and a thorough steeping in pedantry were necessary. Even if they could not bleed in the approved manner, there is no denying that they allowed themselves access to the victim's purse. The surgeons of the long robe were educated also, but they were only humble disciples of the physicians. Even now in Britain, surgeons are still without a professional title and are addressed as mister, a handle possessed in common with greengrocers and ironmongers. The barber surgeons of old were not much better than servants and needed little or no learning. Nor were they troubled by the rules of licensure. The two lower cults were forever poaching upon the preserves of the physicians just as happens in small

a painting by Louis Matout. (Courtesy Cleveland Medical Library Association.)

measure today when untrained and imperfectly educated persons seek to usurp the powers and prestige of those who have advanced themselves the hard way.

So, little by little, the law entered the field, not too successfully, it seems, to settle matters in dispute. In 1543, the English Parliament passed an act which licensed to practice those who had knowledge and experience of the nature of herbs, roots, and waters, by speculation or practice within any part of the realm. Among those were to be found simple women, carpenters, pewterers, ball sellers, and those who had no other claim than that they came from such far away places as Constantinople. Later, as Cotta relates, one saw a swarm of tailors, shoemakers, weavers, midwives, cooks, and priests, as well as conjurors, jugglers, and fortune tellers. Many of these pretenders offered to undergo examination by the Company of Barber Surgeons in order to secure a license. Sometimes the Company showed a certain degree of caution as when they permitted a man to couch cataracts for a space of three months only. Certain persons were allowed to cut for the wry neck exclusively, to set bones, or to cut for the stone. Others were licensed to practice for a limited period on condition that they "Hang not oute their banners or other signes of their profession except at the howse where they shall lye," as the statute so quaintly sets forth.

Over all these years up to the present, the physician has been coming up in the world and his license has lately come with him. Most of us will recall, in Thackeray's immortal story, how Pendennis, the apothecary, gradually wormed his way from the plasters and the surgery to the closed carriage and the cane. He became acquainted with the cheerful face of Prosperity along with a goodly show of guineas in place of shillings and pence, and all this without any license beyond that of experience and respectability.

The self-made physician has disappeared for good, it would seem, but it is still true that the handsomest certificate in the gaudiest frame will never, by itself, take the place of art in the practice of medicine.

HAROLD W. JONES

CONTRIBUTIONS URGED FROM ASSOCIATION MEMBERS

PRESERVATION of the written word and making available the library resources to the reader constitute the chief functions of librarianship. A third library function closely related to the aforementioned might be called a teaching function.[1] For librarians now as never before the accumulation and preservation of books, periodicals and ephemeral materials in a world at war for a world at peace is the primary consideration. Closely allied is the function of interpretation of the library re-

[1] Keys, T. E.: Medical Librarianship: Looking toward 1970. *Bull. Med. Lib. Asso.* 27:208-212 (March) 1939.

sources to the reader. Thus books are cataloged and shelf-listed. Journal articles are analyzed and indexed. Books are reviewed and bibliographies are prepared. Some libraries even offer translation services and abstract articles for their readers. All the above procedures are aspects of the functions the library is primarily concerned with, and the editor will welcome papers for publication on any of the above subjects.

But we do not live by bread alone, and articles on medical history and literature enrich our understanding. To some of us, indeed, life in a medical library would be rather dull without a lively interest in things historical and literary. Let us, therefore, dear readers, have your contributions.

THOMAS E. KEYS

The Development of Amputation

By NORMAN T. KIRK, M.D.

"War is the only proper school for the surgeon."
—HIPPOCRATES.

AMPUTATION is practiced by many primitive peoples, and some archaeologists think it has been in use at least since neolithic times. Neolithic knives and saws of stone and bone have been found, and the presence of what look like amputated bone stumps in skeletons of the period suggests that this may have been one of their many uses. Holländer[1] has shown the possibility by performing amputations in six or seven minutes with these primitive instruments. Moodie[2] describes an ancient Peruvian pottery figure as showing a leg amputated at the tibiotarsal junction, and holding in the right hand a cap of painted bone (or wood or metal) to be adjusted to the stump of the leg (Fig. 1). The murals at La Tène and elsewhere show many hands with amputated fingers. But even if the evidence for prehistoric amputations were more extensive and conclusive than it is, it would still not be certain that these amputations had a surgical intent; there were probably motives of magic, ritual sacrifice, riddance from demoniacal possession, appeasement of the gods, punishment, or beautification.

In the Edwin Smith Surgical Papyrus we have a copy, made in the seventeenth century before Christ, of the first part of an Egyptian surgical treatise which was already ancient at that time. Proceeding from head to foot, the extant part finishes the thorax and starts on the spinal column; the remaining part doubtless continued with the abdomen and the limbs and may have included amputation cases; we do not know.

Among the 250 wounds mentioned in Homer, with a mortality of 75 per cent, there is not a single case of loss of limb. Herodotus, however, has a story of Hegesistratus of Elis, who was captured by the Spartans, thrown into prison and condemned to death. He cut off his chained foot at the instep, burrowed his way out of prison, and escaped, afterwards correcting his Chopart amputation by a wooden foot.

The earliest extant scientific account of amputation is in the Hippocratic treatise *On Joints,*[3] which probably belongs to the latter half of the fifth century B.C., when Herodotus also was writing. The author, who may have been Hippocrates, recommends amputation in gangrene.

FIG. 1. Peruvian jar showing an amputation and cap cover for stump. Courtesy American Museum of Natural History, New York.

Gangrene, he says, takes place in wounds where large blood vessels have been strongly compressed, in fractures of bones which have been bound too tight, and in other cases of immoderate constriction. Strangulated parts generally drop off and most such cases recover, even when a portion of the thigh, arm, forearm or leg has come away. The prognosis is better in leg and forearm cases than in those of the thigh and arm. In fractures complicated by gangrene, separation of the dead from the living parts occurs quickly and the dead parts drop off speedily, because the bone has already given way. In gangrene without bone injury, the fleshy parts soon die here also, but the bone separates slowly at the "boundary of the blackening." The author recommends amputation of the gangrenous extremity at the joint below "the boundaries of the blackening" as soon as it is "fairly dead and has lost its sensibility," and he advises that care must be taken not to wound the living part, lest the patient swoon away and die from pain. He also recommends the expectant treatment, that is, to await the line of demarcation and self-amputation of the extremity.

Amputation between healthy and diseased tissues is first encountered in Celsus,[4] who lived about the time of Tiberius. When gangrene does not yield to other treatment, he says:

> Between the sound and the diseased part, the flesh is to be cut through with a scalpel down to the bone, but this must not be done actually over a joint, and it is better that some of the sound part should be cut away than that any of the diseased part should be left behind. When the bone is reached, the sound flesh is drawn back from the bone and undercut from around it, so that in that part also some bone is bared; the bone is then to be cut through with a small saw as near as possible to the sound flesh which still adheres to it; next the face of the bone, which the saw has roughened, is smoothed down, and the skin drawn over it; this must be sufficiently loosened in an operation of this sort to cover the bone all over as completely as possible. The part where the skin has not been brought over is to be covered with lint; and over that a sponge soaked in vinegar is to be bandaged on.

Ligature is not mentioned in this connection, but speaking elsewhere of hemorrhage from recent wounds Celsus says that when styptics fail "the blood-vessels which are pouring out the blood are to be seized and tied with two ligatures, one on each side of the wounded part, after which the vessels are to be divided between the ligatures, so that they may retract and still have their openings closed. If the case does not admit of this, the actual cautery may be used." In castration, he says, "the veins and arteries towards the groin are to be ligatured with linen thread and cut away below the ligature."

From Hippocrates through Celsus, amputation seems to be indicated only in gangrene, and only as a last resort; but by the time of Archigenes and Heliodorus, under Trajan (c. 100 A.D.), it had become a recognized

procedure for ulcers, growths, injuries, and even for deformities. Archigenes[5] advises placing a tight circular bandage above the line of severance, and cutting down upon and typing or sewing the chief blood-vessels. If bleeding is nevertheless profuse, one must cauterize. Amputation should be through healthy tissue, but not at a joint. Heliodorus also uses the circular bandage to reduce bleeding, to retract the skin and flesh and prevent the saw from tearing them, and to guide the knife. He advises against making a complete circular incision before sawing; one should rather cut down to the bone on that side first on which there is least flesh, then saw through the bone, and finally cut through the remainder of the flesh at a stroke to sever the limb; in this way there will be less bleeding. For the same reason, one should not amputate too close to the elbow or knee. After the amputation, a dressing consisting of tufts of lint, a folding compress, and sponges, is bound on tightly. In describing the operation for hernia, Heliodorus says the larger blood-vessels should be tied and the smaller ones transfixed with a sharp hook and twisted round and round to close them. Perhaps he employed the same technique in amputation. In the surviving fragments on major amputations there is no reference to the flap method, but in describing the amputation of superfluous digits, he writes:

> A circular incision is made round the digit near its base. From this two vertical incisions are made opposite one another, and the flaps so formed dissected up. The base being thus laid bare, the digit is removed by cutting forceps, the exposed head of the metacarpal is scraped smooth with a raspatory, and the flaps are then brought together and sutured.[6]

Antyllus, in the first half of the second century A.D., gives a full and clear description of double ligature to prevent hemorrhage in arteriotomy for aneurysm. Galen, half a century later, adds that the ligatures should be of a material that does not rot too quickly, and to doctors at Rome he recommends a shop in the Via Sacra between the Temple of Rome and the Forum, where aseptic ligaments from Gaul are plentiful and cheap.[7] In view of the frequency with which ligatures are advised in other operations from Celsus onward, it is remarkable that no ancient writer mentions them in connection with amputation. There seems to have been a gradual decline in amputative technique, and it had already set in by the time of Galen, whose practice was apparently the same as that of "Hippocrates."

Paul of Aegina[8] (c. 640 A.D.) describes with approval the procedure of Leonides of Alexandria, a Greek surgeon at Rome (c. 200 A.D.), who first cut down to the bone on that side on which the blood-vessels were fewest and smallest, then applied linen rags to the incised parts to prevent the saw from tearing them, and after sawing through the bone and cutting through the flesh on the other side, applied red-

hot irons to the vessels to stop bleeding, dressed the stump, and took measures to induce suppuration.

Albucasis was the ablest of the Muslim surgeons. His great medical encyclopedia written toward the end of the eleventh century contains a surgical treatise in three books. The first of these is devoted to cauterization, with a different form of instrument for each part of the body and for each disease. He does not, however, as is commonly asserted, prescribe the use of a cauterizing knife for amputation. When gangrene of the lower arms and legs does not yield to medication, he says[9] one should amputate to prevent its extending above the elbow or knee, when it becomes fatal. The limb should be tightly bound above and below the line of severance. While an assistant pulls upward on the upper bandage to retract the skin and flesh, one should make a circular incision down to the bone, insert linen pads on both sides to prevent laceration, then cut or saw through the bone. If hemorrhage occurs during the operation, cauterize promptly or apply some hemostatic powder before proceeding. Apply a suitable dressing and tend until cured.

About the middle of the thirteenth century a crude anesthetic technique was developed by Hugh of Lucca and adopted by his son and pupil Theodoric. A sponge was saturated with a soporific solution containing opium and mandrake, and was dried in the sun. Before an operation, it was soaked in hot water for an hour, then held under the patient's nose. After the operation the patient was revived by applying a sponge soaked in vinegar.[10] Guy de Chauliac[11] cites Theodoric's procedure in connection with amputation, but its use seems to have been more general.

Henri de Mondeville[12] (c. 1300), like Albucasis, used constricting circular bandages above and below the site of amputation. These were drawn in opposite directions by assistants to facilitate the cutting, diminish pain, and lay the bone bare. The fleshy parts were cut with a broad thin red-hot iron or gold cautery, then covered with a damp cloth or leather pad to prevent laceration by the saw.

Guy de Chauliac[13] (c. 1340) describes a similar procedure, attributes it to Albucasis and Avicenna, and gives the impression that it was in common use. Amputation was performed through the mid-portion of the limb or through the joint, depending upon the site of the gangrene. The cutting was by the knife, not by cautery; but the actual cautery or boiling oil was applied afterwards to stop bleeding. Guy then goes on to describe the method he himself preferred. This consisted in lacing a bandage tightly at the joint above the gangrene and allowing mortification to bring about spontaneous amputation. It is more to the physician's credit, he says, to have the limb fall off of itself than to cut it off, for when it has been cut off the patient is forever mourning its loss and thinking it might have been saved.

In many of the writers we have mentioned, it is not clear what the site of amputation is in relation to the gangrene; but most of them seem to intend a simple circular incision through viable tissue just above the gangrene. Vigo[14] (1514), however, says it is better to cut near the healthy tissue but so as to leave a margin of gangrenous tissue behind, and this for three reasons: (1) to avoid pain; (2) to avoid bleeding; (3) to lessen the pain of the post-amputative cautery. Both flesh and bone are to be cauterized up to the sound tissue. Anesthesia is inadvisable because of the risk to the patient.

The use of firearms in warfare was now increasing the demand for military surgeons, and the nature and treatment of gunshot wounds was becoming a controversial subject second only to syphilis. Brunswick (1497), Vigo (1514) and Gersdorff (1517) thought that gunshot wounds were poisoned by the gunpowder used in firing the shot. As in other poisonous wounds, the actual cautery was indicated where possible, otherwise boiling oil. In the latter half of the sixteenth century it was shown by Maggi, Paré, Gale and others that gunshot wounds are not burns and that they are not poisonous.

To stop bleeding from the stumps of criminals who have had their hands or feet cut off by the executioner, Brunswick advises that the stump be stuck into the body of a black hen that has been slit open. Fragments of bone should be removed, jagged ends sawed smooth, and the skin drawn over the stump and sutured. Rules are also given for the guidance of the executioner himself. The flesh should be bound tightly above the site of amputation and retracted upward, the knife poised over the joint and driven through with a club. Ashes of burnt paper should be sprinkled over the wound, the band then loosened and the skin drawn over the stump as above.[15] In a separate chapter[16] on the amputation of superfluous or gangrenous members, added in later editions, Brunswick says that a supernumerary finger or thumb should be amputated at the root and the wound cauterized with hot oil. If gangrene extends to a joint, disarticulate; otherwise amputate below the joint. In both cases the skin must be retracted as far as possible by an assistant and a circular bandage tightly bound a finger's breadth above the gangrene. Then incise the soft parts to the bone, saw through the latter, apply styptic powder mixed with egg white, or cauterize with the hot iron or oil. Brunswick also suggests the use of Theodoric's anesthesia on recalcitrant patients.

The use of firearms also multiplied many times the number of amputation cases that came to the hands of the military surgeon. Gersdorff (1517), whose publication was the first to contain a woodcut illustration of an amputation (Fig. 2), claims to have performed a hundred or two hundred amputations for gangrene and erysipelas.[17] He used two constricting circular bands a finger's breadth apart and amputated be-

Arm/bein abſchniden hat ſein kunſt/
Verriben ſanct Anthonien brunſt.
Gehört auch nit eim yeden zů/
Er ſchickt ſich dañ wie ich im thů.
Serratura.

FIG. 2. First printed illustration of an amputation. From Gersdorff's *Feldtbuch der Wundt-Artzney* (1517). From the copy in the Army Medical Library.

tween them. He has an elaborate recipe for a styptic to be mixed with egg white and applied to the wound to check bleeding. If that fails, he says the cautery should be used. "Bind now over the styptic a good thick pad, take the bladder of a bull, ox, or hog, one which is strong, cut the neck open so that it will go over the pad and stump, and the bladder should be wet but not too soft; draw it then over all, tie it hard with a band and you need have no care about the bleeding."[18] Neither Gersdorff nor Brunswick nor Vigo mentions the ligature in this connection.

It was Paré, the great French army surgeon, who reintroduced in the sixteenth century the ligation of vessels in amputation (see Frontispiece), and other forgotten teachings of Celsus, and who discontinued the use of the cautery and burning oil for checking hemorrhage and for treatment of gunshot wounds.

In 1536, Paré as a junior surgeon in his first military campaign on the Straits of Susa, following the teaching of Vigo and the example of his seniors, used pledgets and tents dipped in burning hot oil as a dressing for the wounded. He was of the opinion that gunshot wounds were not poisoned, that these caustics caused pain and increased the inflammatory reaction, so one night, his oil giving out, he made a "digestive" dressing of the yolk of an egg, oil of rose and turpentine, which he applied to several wounded. He could not sleep that night, fearing he would find his patients dead in the morning. But, on arising early, he found that they had rested well and the wounds were not inflamed. He states that this was his first discovery and that he thereupon resolved never to burn a gunshot wound again.[19]

Prior to 1552 Paré still advocated and used the cautery, after amputation. But about this time, being accustomed to tying vessels in severe wounds, he suggested to his colleagues that the practice might be extended to vessels exposed during amputations of extremities. He tells us how, "at first in my budding practice thereof, I always had my cauteries and hot irons in readiness, so that if anything happened otherwise than I expected in this new work, I might fetch succour from the ancient practice, until at length confirmed by the happy experience of almost an infinite number of particulars, I bid adieu to all hot irons and cauteries which were commonly used in this work."[20]

He quotes Celsus among others in his argument for the use of the ligature rather than cautery, stating that the latter is of value when amputation is performed through dead tissue, but in living tissue it is too painful and leaves an eschar, which, on sloughing off is frequently followed by secondary hemorrhage and the bone becomes bare and an incurable ulcer remains.[21]

In his Voyage of Danvilliers, 1552,[22] Paré records the successful amputation of a "gentleman's leg" through the upper third without the use of the cautery. Elsewhere he describes a re-amputation at the

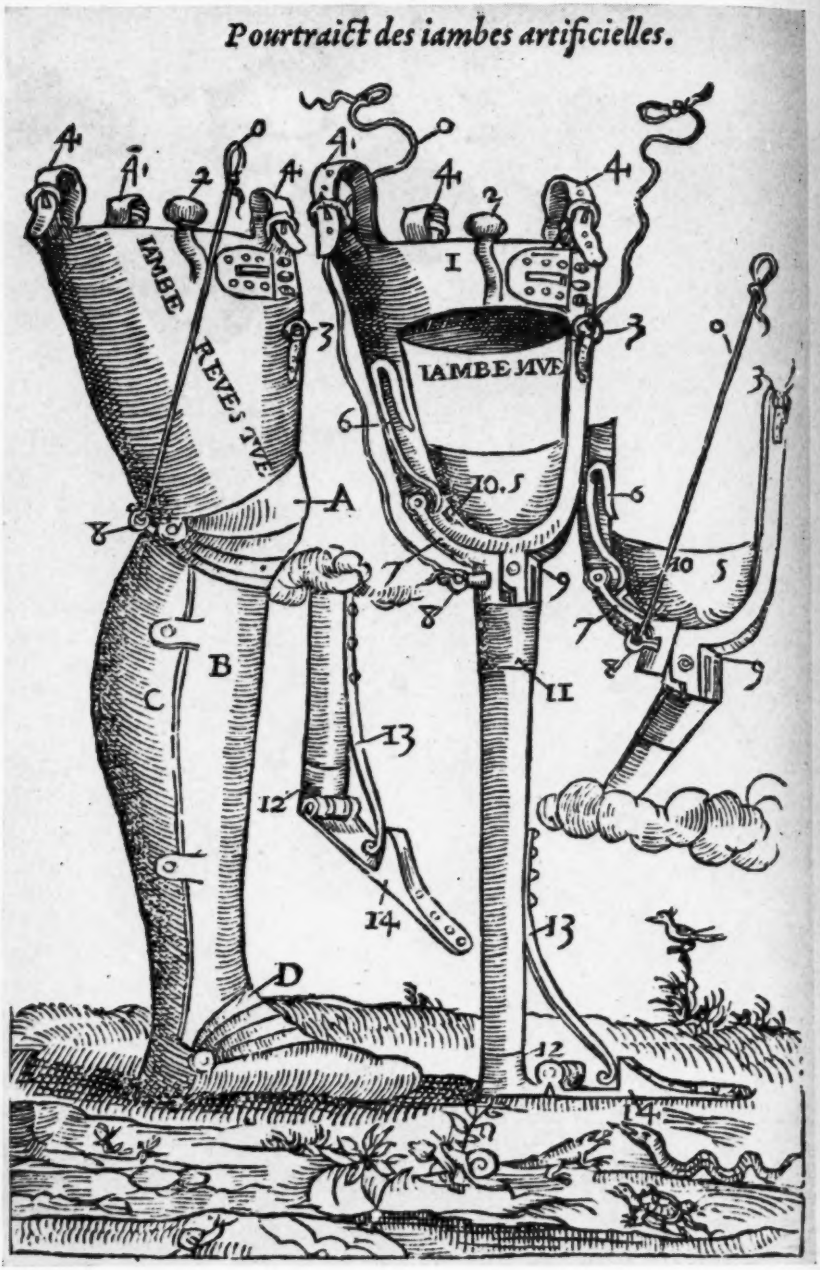

FIG. 3. Artificial leg invented by Paré, from his *Oeuvres*, 1575. From the copy in the Army Medical Library.

FIG. 4. Amputation in the home from Fabry's *Opera,* 1646. From the copy in the Army Medical Library.

same level in the case of an officer whose foot had been shot off with an "iron bullet" and whose stump had healed but was too long for proper prosthesis.

He emphasized the importance of removal of all dead tissue in amputating for gangrene, according to the advice of Celsus, and he also introduced the modern surgical doctrine of the site of election. For example, the leg was to be cut off five fingers' breadth under the knee so that the patient could more easily use a wooden leg; but in the arm he states we must do otherwise and cut off as little of the sound part as possible.[23] He describes the pain referred to the amputated extremity, which was often grievously complained of by the patient, for months after its removal, and he points out that this should not hinder the intended amputation necessary to save life in cases of gangrene.

In addition to these marked advances in the technique of surgery, Paré also invented many useful surgical instruments and made the first artificial limbs for the upper and lower extremities (Fig. 3).

The first description of the use of the ligature in amputations originally written in English, was published in 1596 by Peter Lowe, a Scotch army surgeon.[24]

Fabry, the leading German surgeon of his period, in his monograph on gangrene in 1593, like Paré, recommended amputation above the diseased part, and is credited with being first to amputate through the thigh. He controlled the circulation by means of a band tightened by twisting with a stick. An illustration showing an amputation being performed in the home is reproduced from Fabry's book (Fig. 4).

The reintroduction of the ligature by Paré, and the discovery of the circulation of the blood in 1616 by Harvey led to the invention of Morel's tourniquet in 1674, commonly known as the Spanish windlass, and Petit's tourniquet, invented in 1718, perfected the means of controlling hemorrhage in amputation.

The control of hemorrhage by the tourniquet and ligature having been accomplished, the next requirement was speed and simplicity to reduce pain in amputation.

Until the eighteenth century, with the exception of Paré, little thought was given to the condition of the stump resulting from the operation. In fact, the ideal stump for prosthetic appliances was not attained until after the introduction of anesthesia in 1846-47, and of aseptic surgery following the antiseptic period of Lister in 1870.

The commonest of all amputations was the transverse circular type. It consisted of a simple transverse incision through healthy tissues. This method, as can readily be seen, did not provide adequate covering for the bone end after healing. It was, however, the quickest and simplest method for the removal of a useless or diseased extremity. This procedure was modified by Petit of Paris in 1718, to afford more bone covering.

The skin and fascia were first divided circularly and retracted and then the muscles were cut through at the highest possible level.

Louis of Paris, in 1752, returned to the simple transverse incision, but he sawed through the bone at a level higher than the retracted soft parts.

Technical improvements were added by Alanson of Liverpool, in 1779, and by Hey of Leeds in 1803. Hey, who called his method the "triple incision" described it as follows: The first incision divided the skin and fascia, which were dissected up for a sufficient distance. A second incision divided the muscles to the bone. The muscles were then retracted and the bone sawed through at a still higher level.[25]

The oblique or oval method was first described by Sharpe of London in 1739. This method, as the name implies, is a modification of the circular—cut in the same fashion—except that instead of the incision being transverse in direction it is oblique, forming a lateral flap. It allows a higher access to the bone and a somewhat wider range of adaptability in selected cases.

The ratchet incision, introduced by Malgaigne of Paris, 1837, is formed by adding a longitudinal incision to the oblique or circular. This incision is particularly adaptable for amputations through joints.

The flap methods were developed from the transverse circular or oblique by adding two longitudinal incisions. Verdún of Amsterdam (1696) employed musculo-cutaneous flaps, cut by tranfixion. Ravaton (1739) cut double square flaps equal to half the thickness of the limb. Vermale (1765) improved the latter's technique by fashioning rounded or oval flaps by the transfixation or dissection method. Transfixation was originally used as it required less time, causing less pain to the patient, but the resultant flaps could not be as neatly fashioned.

This was the status of the technique of amputations, developed since the time of Paré, mainly in civil surgery, at the beginning of the nineteenth century.

It was at this period, due to the effort and writings of the great Baron Larrey of France in the Napoleonic Wars, and the British Medical Corps ably headed by Guthrie in the Wars of Great Britain, that amputations reached the peak of advancement and perfection prior to the days of anesthesia and asepsis.

Larrey[26] was the first to disarticulate the hip joint successfully. He performed this operation twice in 1803, both cases terminated favorably. He developed a method for disarticulation of the shoulder joint, which he stated had been done twice previously with fair success, and performed the operation eleven times in twenty-four hours—following the capture of Smolensk in the Russian campaign. Nine of these patients recovered completely, the other two dying of "dysentery." In this same campaign he performed two hundred amputations in a twenty-four

hour period. In connection with the treatment of a shoulder girdle after a traumatic amputation of the arm by a cannon ball, he describes the technique of debridement as we understand it today.

Guthrie successfully disarticulated the hip joint during the Battle of Waterloo. In his *Treatise on gunshot wounds* he reviews twenty cases of this amputation as performed by the leading surgeons of the times, including one of his own, three of which were successful, and seven of which died of causes independent of operation. Ten died as a result of the operation or by infection. This operation was not in good favor with the profession at the time, due to the high mortality, and he here makes a plea for its acceptance. Larrey considered its danger, when properly performed, not particularly greater than disarticulation at the shoulder.

Amputations were then classified by military surgeons as follows: Primary—the operation being performed as soon after the receipt of the injury as the condition of the patient permitted—ordinarily in the first twenty-four hours. Secondary—performed later than three weeks after the receipt of injury and after the development of suppuration.

Prior to this time many authorities, including Faure (1756), Hunter (1794), Baron Percy (1792), the latter quoting the opinions of La Mortimère, Louis Sabatier and Dessault, favored and taught that secondary amputation was preferable.

Larrey and Guthrie both found that primary amputation gave a lower operative mortality, the stumps healed more quickly with less infection, and fewer cases of recurrent hemorrhage occurred. They also found that many cases succumbed to infection, after long periods of suffering, while awaiting amputation, and that hospital gangrene and metastatic abscess of internal viscera were more prevalent following the secondary operation. They both practiced immediate amputation on the field of battle. This we now know lessened the shock and absorption of proteids and infection in the wound. They advocated primary operation in all cases where amputation was indicated.

In general, the indications for immediate primary amputation were: all compound fractures of long bones the result of gunshot wounds, whether produced by shell or rifle bullet; all fractures entering joints; all gunshot wounds of joints; non-fracture cases with extensive loss of soft parts, including the main nerve supply, and in destruction of the main blood supply of an extremity with or without fracture. This applied to all thigh injuries, since the results of the treatment of compound fractures of the femur were particularly unsatisfactory, as illustrated by forty-three of the most promising cases after the Battle of Toulouse that were treated conservatively in a well equipped nearby hospital. Of this number, thirteen died forthwith, and twelve were amputated secondarily, with seven deaths. Of the remaining eighteen, three months

later, five were considered well, two thought their legs better than an amputation stump and the remaining eleven wished they had suffered primary amputation.

Fewer amputations were required in the leg than in the thigh, because of the superficial position of the tibia and the presence of the two bones, and still fewer in the forearm and arm. Guthrie believed that in uncomplicated compound fractures of the leg, the result of bullet wounds, primary amputation was rarely indicated.

The circular method of amputation was the method of choice and was generally performed. In high thigh amputations and occasionally in the leg and at the shoulder and hip, the flap method was used.

The technique of the amputation of the thigh by the circular method as described by Guthrie was as follows.[27] After the application of the tourniquet, or of digital pressure of the femoral on the pelvis, the skin is retracted upwards by the hands of one assistant and put on the stretch downward by another, making its division more easily accomplished, giving less pain to the patient and providing the maximum retraction of the integument. The incision was made through healthy tissue, above the injury. The skin and fascia were cut through with one circular incision of the knife, this being the most painful part of the operation. The fascia was completely divided and separated from muscle to allow the maximum contraction. The outer muscles were cut through at the retracted integument by circular incision, and, after their retraction, the deeper muscles attached to the bone were likewise incised, at the level of the retracted superficial muscles. The muscle attached to the bone was then separated for a distance of at least three inches, so that the bone end would be well imbedded. In secondary amputations, due to the lessened elasticity of the skin and muscles from inflammatory infiltration, the bone was sectioned an inch or more higher. The muscles were then retracted with a linen retractor, the periosteum cut through circularly at the saw line and the bone sawed through. The periosteum was not removed above the bone end. Guthrie found that an exfoliation of bone usually followed if the periosteum was removed. The arteries were secured and tied with a strong thread ligature, one end being cut short and the other long, unless dental silk was used, when both were cut short. Veins were not ligated unless absolutely necessary, as it was thought this produced sepsis. The nerves were cut short and allowed to retract. The wound was sponged with cold water and dried. The soft parts were then brought down over the bone end, placed in apposition horizontally across it, and retained by adhesive plaster strapping. The long ends of the ligatures were brought out between the adhesive strapping so that they could be removed when they separated, on the sixth to tenth day. The stump was then bandaged. Adhesive plaster strapping was used by the British in primary ampu-

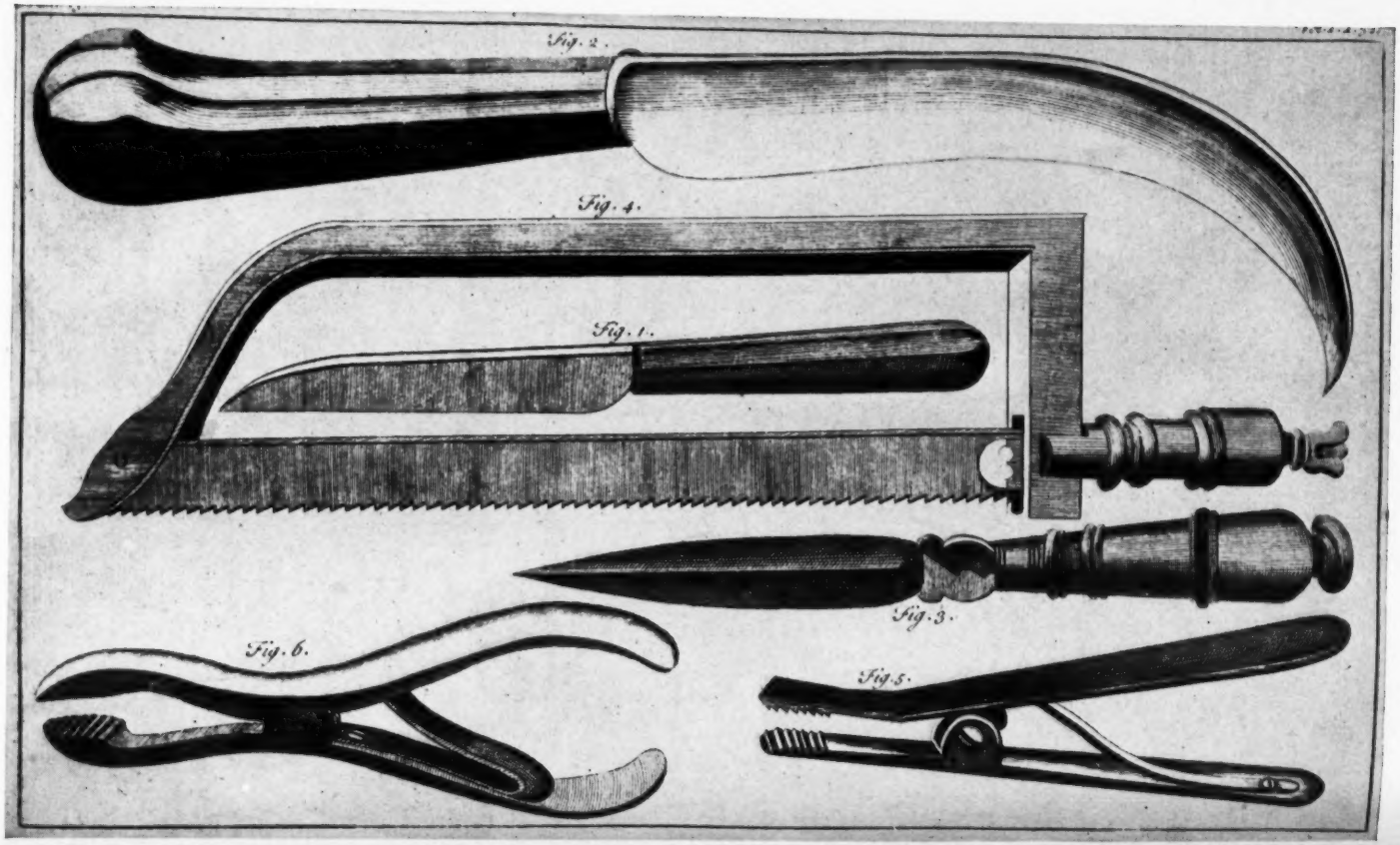

FIG. 5. Instruments for amputation. From Heister's *A General System of Surgery*, 1743. From the copy in the Army Medical Library.

tations, in the hope that primary union would follow. It was not employed in secondary amputations, bandages only being used, a roller being applied from the upper part of the thigh to the stump end.

Baron Larrey directed that healing by first intention and the use of adhesive plaster be not attempted, having found that death too often occurred following this method. He was of the opinion that the stump end should be left open, covered only with a light dressing, and that the soft part could be properly held in place by circular bandaging.

Larrey found in his campaign in Saxony that the Saxons divided the skin and muscles by means of a curved knife (see Fig. 5) at one stroke, and sawed the bone on a level with the sectioned soft parts. The wounds were sutured tightly without ligation of vessels, before the removal of the tourniquet. Exact and close apposition generally prevented wound hemorrhage but the pain the patients suffered was severe. He reports that all cases, without exception, which he saw, died of gangrene in the interior of the wound after the fourth day. In his own wounded in his two months' campaign in Saxony, he reports nine hundred and seventy-two amputations, including twenty-two successful disarticulations of the shoulder and twenty double amputations, with two hundred and forty-one deaths. Tetanus was responsible for a number of these. His mortality was lower than the British and lower than that in our own War of the Rebellion.

Guthrie originally recommended a flap operation in amputation through the upper part of the thigh. Later he was of the opinion that the circular method was preferable, unless the soft parts were so destroyed that the circular method could not be used to advantage, in which case he performed the flap amputation.[28] The circulation was controlled by digital pressure on the femoral over the pelvis. Lateral skin and fascia flaps were fashioned and retracted by the hands of the assistant, the inner flap being cut longer than the outer to afford better covering for the bone end. The muscle was then divided to the bone following the outline of the skin incision from without inward, the femoral and profunda arteries being secured after section of the internal flap. The muscles were retracted by linen retractors and the hands of the assistant while the bone was sawed through. After control of hemorrhage the flaps were bound together laterally and fixed with one suture in the center reinforced by adhesive strapping. The cutting of lateral rather than anterior-posterior flaps allowed much better dependent drainage of the stump end. The bone was sawed through just below the lesser trochanter. It was believed that additional length gave no better stump unless amputation was possible through the middle third, and shortening to this level allowed more covering for the bone end.

Guthrie quotes and agrees with Petit that the following precept should govern the surgeon in amputating: "To cut away as much of the bone, but as little of the flesh, as possible."[29]

Amputation. From Heister's A General System of Surgery, 1743. From the copy in the Army Medical Library.

The sites of election for amputations in the thigh, at this period, were at its middle third, or just below the lesser trochanter.

In the leg the site of election was four inches below the patella (Guthrie), or four fingers' breadth below the knee (Larrey). Both agreed that amputations in the lower third of the leg healed poorly, and that these long stumps were a detriment when fitted with a wooden leg (flexed knee peg leg), as the stump end protruded too far posteriorly. Few patients could afford to have an artificial foot attached which was less serviceable, but when this was desired the stump should measure seven inches in length.

Where it was impracticable to amputate lower and in order to get a satisfactory weight bearing stump about the knee, Larrey recommended amputation by the circular method, just below the tibial tubercle, with removal of the head of the fibula, rather than amputation through the thigh.

The circular method was generally employed at the site of election, the two bones being sawed of equal length and the crest of the tibia cut away if particularly sharp. The soft parts were approximated laterally rather than transversely, as in the thigh, to prevent the tibia from cutting through. This method only was practiced by the French, and they never amputated below the point of election, regardless of the site of injury in the leg.

Guthrie, in selected cases of war wounds and civil practice, advocated the long posterior musculo-cutaneous method of Hey, but stated that considerably more attention was necessary in dressing. In this method a long posterior flap of skin, fascia and muscle, from the calf was cut by the transfixation method. A short anterior skin flap was fashioned and after section of the bones at the middle third of the leg, the posterior flap was brought up in position covering the bone ends, fixed with two lateral sutures and reinforced with adhesive. The only objection to this method was that care had to be exercised in dressing, or the heavy posterior flap would pull away and expose the bone. This method of forming the posterior flap by dissection of the skin and fascia from without, is still described and accepted in our textbooks on surgery.

This period should not be passed over without a brief description of Larrey's method of hip and shoulder joint amputations, since he was the first to perform successfully the former and since he developed and performed the latter so many times, with comparatively low mortality. Larrey first ligated the femoral artery and vein, just below Poupart's ligament, while digital pressure was made by an assistant. A straight sharp pointed knife was then plunged perpendicularly through the thigh at a level of the lesser trochanter and, by cutting downward and inward, the internal flap was formed. The capsular ligament was divided by a single stroke of the bistoury, the head of the femur dislocated, the

ligamentum teres divided, and an outer flap formed by cutting from within outward, from the brim of the acetabulum over the great trochanter, downward and outward to the level of the tuberosity. The assistant held the flaps to control hemorrhage until the vessels were ligated. If the amputation was through healthy tissue, a few interrupted stitches were placed through the fascia and skin (none through muscle) to approximate the flaps. The operation required but fourteen to fifteen seconds, after the primary ligation.

Larrey's description of the amputation of the arm at the shoulder joint is as follows. The patient is seated at a suitable height, and the operation commenced by a longitudinal incision beginning at the edge of the acromion and descending about one inch below the level of the neck of the humerus. By this act the integuments are cut through and the fibres of the deltoid muscle divided into two equal parts. Then the skin of the arm is drawn toward the shoulder by an assistant and two flaps formed, an interior and posterior one, by two oblique cuts, from within outwards and downwards, so that the tendons of the pectoralis major and latissimus dorsi are comprised in each section. No apprehension is to be entertained as to injuring the axillary vessels, since they are out of reach of the point of the instrument. The cellular adhesions of the two flaps are then divided and raised up by an assistant, who at the same time stops the cut circumflex arteries, and the whole shoulder joint is laid bare. By a third circular incision around the neck of the humerus the capsule and articular tendons are divided; the head of the bone is drawn a little outwards and the knife passed to its posterior part, in order to complete the section of the tendonous and ligamentous attachments on this side. The assistant immediately directs the first fingers of his two hands to the brachial plexus, in order to compress the artery and render himself master of the blood. The cutting edge of the knife is, in time, turned backwards and the bundle of the axillary vessels divided on a level with the inferior angles of the two flaps, and in front of the assistant's fingers. The patient does not lose a drop of blood, and, the pressure being continued, the extremity of the axillary artery is easily discovered. It is then seized with a pair of dissecting forceps, in order that a ligature may be immediately thrown around it. The circumflex vessels merely remain to be tied, and the operation is terminated.

The wound having been cleansed, the flaps are approximated, and maintained in contact by means of two or three adhesive straps, moderately tight, and the whole stump covered with fine linen dipped in some tonic liquid, such as warm wine. The dressing is concluded by the application of charpee or fine tow over the linen, with simple quadrilateral compresses, and an appropriate bandage.

Robert Liston[30] (1837) popularized the flap method of amputation,

considering that it gave a superior stump to the circular. He used the transfixation method, fashioning the antero-posterior flap for disarticulation of the hip and in amputation through the thigh and a long posterior flap in amputation through the leg. He believed the sites of election to be, in the thigh, the middle third and in the leg, the upper third for the laborer, and the middle third if an artificial foot was desired as a part of the prosthesis. Digital pressure was preferred to the tourniquet; hemorrhage from the flaps was controlled by the assistant seizing and holding them with his hands until the vessels were secured.

Syme[31] (1845) found that the mortality of amputation through the shaft of the femur in the best civilian hospitals was from fifty to seventy-five per cent, and the resultant stumps of those that survived were unsatisfactory. He considered these results to be due to the opening of and inflammation in the large medullary canal, to trauma of the cortical bone, and to interference with the periosteum, with the resultant exfoliation of the femur. He recommended that amputation for compound fractures, tumors of the leg or disease of the knee joint be made only through the cancellous bone of the condyles and that amputations for compound fractures and tumors of the thigh be made only through the trochanters. This was the attempted adaptation of his successful operative procedure through the cancellous bone of the leg just above the level of the ankle.

With the introduction of sulphuric ether at the Massachusetts General Hospital by Morton and Warren in 1846, a period of rapid progress in general surgery began. Speed to lessen pain during the struggles and distress of the patient was no longer necessary. There was time for thought and improvement of technique, for study of the resulting stumps in amputation, and for application of the theories of Pasteur and Lister, adopted and put into practice in the late eighteen seventies.

Lister, in his early hospital experience (1864-66), had been concerned by his own high mortality in amputations. He had a mortality of forty-five per cent in Syme amputations, a mortality higher by far than those of Larrey and Guthrie. Lister attempted the suture of flaps and the closure of wounds by silver wire and drainage, hoping, after the teaching of Syme, for primary union.

The antiseptic teachings of Lister came too late for our War of the Rebellion, and were first used by the military surgeon late in the Franco-Prussian War. The closed method of amputation was not a safe procedure until the advent of general asepsis, introduced by Von Bergman (1886-1891).

In the history of the War of the Rebellion[32] are recorded a great mass of data, statistics, references and case reports of amputations which

had occurred in this and in former wars. The Medical Department of the Union Army recorded 12,106 amputations of the lower extremities for 27,010 gunshot fractures, excluding 1,518 partial amputations of the foot. At this period amputations were classified, accordingly to time of performance following receipt of injury, as Primary, within twenty-four hours; Intermediary, following the twenty-four hour period and including the time of inflammation; Secondary, two weeks or more after the injury and during the suppurative process; and Reamputation, where the extremity was removed later and at a higher level.

Chloroform seems to have been the anesthetic of choice. Infection and suppuration were the rule after operation, and healing was usually by granulation. Hospital gangrene of the stump, a frequent complication, was attributed to overcrowding. The mortality in primary amputations was lower than in the intermediary, but was higher in nearly all groups in primary amputations than in secondary.

Primary disarticulation of the hip was practiced twenty-five times, three cases being successful, one dying from infection and the others succumbing to shock and hemorrhage during or almost immediately following operation. The following are the results of the sixty-six cases operated upon for amputation of the hip.

Primary amputation	25	Mortality	88%
Intermediary amputation	23	Mortality	100%
Secondary amputation	9	Mortality	77.7%
Re-amputation	9	Mortality	33.3%
Total	66		74.75%

The expectant treatment of compound intra-capsular fractures of the hip gave a mortality of 98.8%. Fifty-five excisions gave a mortality of 90.9%. Amputation, therefore, was considered indicated: (1) When the thigh is torn off or the upper extremity of the femur comminuted with great laceration of soft parts, in such proximity to the trunk that operation in the continuity is impracticable. (2) When a fracture of the head, neck or trochanter is complicated with a wound of the femoral vessels. (3) When a gunshot wound of the hip joint is complicated by a severe fracture, compound, comminuted, of the limb below or by a wound of the knee joint.

Of the many methods used, the anterior-posterior flap method was employed most often. Larrey's method was used eight times.

At this time there were 254 cases collected and reported from the literature with a mortality of 89.1%. Only two re-amputations had been reported prior to the nine performed during the Civil War. With the high mortality of the expectant treatment, the primary amputation seemed justified, though this was still questioned by many.

There were 6,738 gunshot wounds of the shaft of the femur. Of these, 3,467 were treated conservatively, with a mortality of 51.1% and 2,900 amputated through the thigh, with an average mortality of 55.4%. In primary amputation, however, the mortality was lower 49.8%. Prior to 1850 only 250 gunshot wounds of the femur were reported as treated by conservative methods, 3,474 were so treated to 1876. There was a grand total of 6,228 amputations through the thigh, with a mortality of 53.8%. This mortality varied as to time and site of operation, as follows:

Upper Third	73.6%	Primary	49.8%
Middle Third	55.3%	Intermediary	63.7%
Lower Third	45%	Secondary	45.9%

Shock due to operation played a small part in the mortality rate in amputations at and below the middle third of the thigh, but infection with general sepsis was usually the cause of death in these cases. Shock was found to be severe at the hip and to a less extent in those of the upper third of the thigh. In 9,017 amputations of the thigh, collected from the literature of preceding wars (1689 to 1876), there was a mortality of 83.2%.

The results of conservative treatment of gunshot fractures of the femur did not accord with Guthrie's observations and writings in 1827. He wrote: "Upon a review of the many cases I have seen I do not believe that more than one-sixth recovered so as to have useful limbs; two-thirds of the whole died either with or without amputation; and the limbs of the remaining sixth were not only nearly useless but a cause of much uneasiness to them the remainder of their lives."

As has been indicated, all types of methods were used but no definite conclusions as to the best method of treatment of soft parts in the formation of the stump seem to have been reached. The flap method was used 1,141 times, the circular method 863 times, and the oval method 18 times. The straight circular and the unmodified flap method were recommended. The Gritti-Stokes operation was employed twice.

Compound fractures of the knee joint were responsible for 2,399 amputations through the thigh, almost equalling those required for gunshot fractures of the shaft of the femur.

There were 3,355 reported cases of gunshot fractures involving this joint, 868 of which, under conservative treatment, gave a mortality of 60.6%. The mortality following resection in 57 cases was 81%. There were 54 cases treated by disarticulation with a mortality of 56.6%.

The operation of disarticulation was performed 135 times because of gunshot injuries of the leg. The mortality of amputations through the thigh in these cases was 51.1%. When primary amputation was

practiced the mortality was reduced to 43.8%. It was 63.4% in intermediary and secondary amputation. From these statistics, it appeared that by primary amputation in all cases of compound fractures of the knee joint, the mortality could have been lowered by 16.8% and such operation was recommended for all cases.

In 52% of the 8,988 gunshot fractures of the bones of the leg treated by amputation, 897 were performed through the thigh and 112 by disarticulation at the knee joint.

Of the 3,939 cases receiving conservative treatment there was a mortality of only 13.1%. The mortality rate in the 5,452 amputations of the leg averaged 32.9%. The cases were about equally divided as to thirds, and, in cases not specified, as to site of amputation. The mortality was highest in the lower third, and lowest in the middle third. In one-half of the cases the type of amputation was not stated. Those amputated by the flap method exceeded those by the circular by about 400 cases. It was found that sloughing of the soft parts was less frequent when the crest of the tibia was bevelled and this was recommended in all amputations.

Of the 1,711 gunshot fractures of the ankle, one-third were treated by conservative methods with a mortality of 19.5%. 1,083 were amputated through the leg, and 19 through the thigh. Amputation through the ankle was practiced in 161 cases with a mortality of 25%. Of these there were:

Pirogoff's method	49	28.5% mortality
Syme's method	83	25.8% mortality
Other methods	29	17% mortality

Amputation through the leg was done 1,612 times (21.3%) for injuries of the ankle and foot and disarticulation of the ankle joint 161 times (2.1%) for the same condition. Although the mortality was a trifle lower in the cases of disarticulation, 18% of the 161 required re-amputation through the leg, while only 4% of the leg stumps required re-amputation.

At this period in amputations it would appear that amputation through the middle third of the leg was preferable to one through the ankle joint. This level was considered the site of election, as the mortality was 7% lower than in either the upper or lower third. Half of the re-amputations necessitated in the leg followed original amputations in the lower third. Considering this fact and the type and cost of the prosthesis when finished, this level was selected as the ideal, regardless of the fact that the stump end protruded backward when fitted with a peg leg.

The foregoing statistics clearly demonstrate the high morbidity and resultant mortality in the treatment of compound fractures by

amputation before the advent of aseptic surgery. The technical procedures in amputation, such as the treatment of the soft parts by using the manifold modifications of the circular and flap methods, using transfixation, dissection, or some special method, and treatment of the bone and its periosteum, either by cutting it flush at the saw line or covering the bone end with a musculo-periosteal flap, one and all failed to lessen the death rate from sepsis.

With the development of aseptic surgery in the latter part of the nineteenth century, the primary debridement of wounds, the improvement in the treatment of compound fractures by immediate splinting (for transportation), the suspension traction methods, and the sterilization and control of infection by derivatives of the halogen group, fewer such cases, both in peace and war, are found to require amputation. The mortality rate has been greatly lowered.

It is of interest to note the difference in the mortality rate in amputations of the lower extremity as determined by Estes[33] in his personal experience in civil industrial surgery, when compared with the above tables of the pre-aseptic days of military surgery.

	Cases	*Deaths*	*% Mortality*
Amputations of foot	75	0	0
Amputations of leg, lower third	123	2	1.62
Amputations of leg, middle third	69	0	0
Amputations of leg, upper third	29	1	3.44
Amputations of thigh, lower third	112	8	7.14
Amputations of thigh, middle third	49	8	16.32
Amputations of thigh, upper third	19	4	21.00
Amputations of knee joint	41	1	2.43
Amputations of hip joint	12	4	33.33
	529	28	5.29

The following tables from The Surgeon General's Office, U. S. Army, show the amputations of the lower extremity in France for battle casualties during World War I. Injury to soft parts with its incident infection was responsible for more than half as many amputations as were compound fractures and the mortality rate was higher.

These tables are comparative only, and exceed the total number of amputations since there is a certain amount of duplication in that one amputation may be listed under both headings.

Amputations necessitated by compound fractures of:

	Number	*Deaths*	*% Mortality*
Tibia and Fibula	1,564	274	17
Knee	8	3	37½
Femur	770	227	29
Pelvis	5	3	60
	2,347	507	21

Amputations necessitated by injury to soft parts:

	Number	*Deaths*	*% Mortality*
Leg	664	156	23
Thigh	555	134	24
Knee	130	34	26
Hip	13	3	23
	1,362	327	24

In my own personal experience[34] of some 1,500 primary amputations, repair of guillotine stumps and re-amputations in army hospitals following the first World War, there have been two operative deaths, both from shock. One was a guillotine disarticulation at the hip joint for a chronic septic condition; and the other a primary amputation of the thigh. Included in this number are ten disarticulations of the hip joint.

Agents of modern living have, on the other hand, become much more effective in their destructive powers. The automobile, the railroad, the airplane, accidents incident to mining, and heavy powerful machinery used in industry, all produce greater mutilation and destruction than agents used for transportation, and in manufacture half a century ago. Wounds from shells have always been more severe and more complicated than those due to bullets. Shells cause greater comminution of bone and destruction of soft parts and blood supply. In the Civil War 10% of the wounds were caused by shell and 90% by bullets. In the first World War this ratio was reversed. The high explosive shell, replacing the shrapnel in the trench warfare of the World War, was without parallel in its destructive action.

Larrey found that the closure of flaps, even loosely, by suture, in his time meant gangrene of the stump and death from sepsis. Guthrie and the British closed their flaps with adhesive plaster, leaving large spaces for drainage, an occasional suture being used to hold heavy flaps in apposition. The same principle was used during the Civil War, except in particular amputations where flaps were closed loosely by suture. With aseptic surgery, suture of amputation flaps became safe. At first only the skin and fascia were closed but later the large muscle flaps were quilted over the bone end loosely and the skin and fascia closed with drainage. Flaps were cut long and sewed up loosely, as a bag of meal is closed, to allow for post-operative swelling and drainage.

The experiences of the World War afforded an opportunity unequaled in recent days for our Allies and ourselves alike to study the technique and results and after care of amputations. Certain new methods were developed, many old ones discarded, the whole surgery of amputations was simplified and the functional value and composition of the various stumps from a prosthetic standpoint determined.

Prior to World War I, during a period of it, and even afterwards, it was still accepted that suture following amputations necessi-

tated by trauma or for the control of infection was a correct procedure. It was also accepted doctrine that amputations should be performed well above the lesion, through healthy tissue, if such tissue exists in a badly infected extremity.

Our Allies used the open or guillotine amputation in compound fractures and for the control of virulent infections following extensive lacerated wounds of soft parts and bones before our entrance into the first World War.

The large number of deaths and re-amputations that occurred during evacuation or after arrival at stationary hospitals because of the gas bacillus and other infections in our Army in France caused the Chief Surgeon of the Expeditionary Forces to issue orders forbidding primary suture after amputation.

In the highly fertilized fields of France early and severe infections with gas producing bacilli (Welch and others) and the hemolytic streptococcus occurred. These cases required amputation when debridement and mechanical sterilization failed.

With certain modifications in technique the general surgical principles practiced by Larrey in amputations over a century before, on the same battlefields, came again into vogue.

Today amputations are classified as to type, as follows: (1) Closed Method: The amputation is performed through healthy tissue; the soft parts are closed; primary union is expected; the surgery of the stump is completed, and it is usually an operation of election. (2) The Guillotine, or Open Method: The extremity is removed by a circular type amputation, and the whole cross section is left open for dressing. Further surgical repair is necessary before the stump is suitable for prosthesis. The reader is referred to the recent literature for present day technique.

Conditions requiring amputation are more numerous in the lower than they are in the upper extremity. The lower extremity, as well as its stump, is subject to much harder usage and greater work of weight bearing and locomotion than is the upper. It is also more subject to circulatory disturbances, new growths, deformities not amenable to correction, uncontrollable infections, traumatic injuries, and so on, than is the upper. The amputation stump in the lower extremity must be so constructed as to carry the body weight in whole or in part and to act as a lever in producing locomotion in walking. It must, to be useful, perform these functions painlessly. Ideally, the stump should bear the whole body weight upon its end as nature intended the long bones to function. Practically, however, few stumps are fitted with a prosthesis to allow for full weight bearing, either because better function can be gained otherwise or because the stump does not permit full weight to be borne upon the stump end. Nevertheless, from a strictly surgical

point of view, all stumps ought to possess the property of full weight bearing. The sites of election are as follows: (1) In the foot the highest level permissible is distal to the bases of the metatarsal bones, preserving the insertion of the leg muscles, tibialis anticus, tibialis posticus and the peronei, thereby preserving equal muscle balance. (2) Above this level the site of election is the middle third of the leg, giving a stump length of not more than seven inches. All bone length possible should be saved above this level. A two inch stump can be fitted with a below-knee prosthesis. (3) In the thigh the site of election is supracondylar and all possible bone above this level should be saved.

Since all authorities do not agree on this selection of levels other levels and types of amputations are described and discussed briefly.

Amputations through the foot have a limited field. In traumatic injuries the plantar surface is usually destroyed and in inflammatory and gangrenous conditions its circulation is usually interfered with. A long plantar flap is necessary so that by placing the suture line on the dorsal surface of the remaining foot stump the latter will be rendered serviceable.

Lisfranc[35] first described his operation at the tarso-metatarsal joint in 1815. He used a long plantar flap and disarticulated through the metatarso-tarsal articulation. The resultant stump is unsatisfactory because of the loss of the insertion of the tibialis anticus, tibialis posticus and peronei muscles, and also because, due to the unopposed or weakly opposed pull of the tendo achilles, an equinus deformity invariably occurs. Even after tenotomy of the tendo achilles, the deformity recurs.

Chopart's operation, a mid tarsal disarticulation, is first described by Lafiteau in 1791.[36] A disarticulation is accomplished at the astragaloscaphoid joint just behind the tuberosity of the scaphoid and externally at the calcaneo-cuboid joint, midway between the external malleolus and the tubercle of the fifth metatarsal. The stump end is covered with a long plantar flap. This leaves in the foot the os calcis with the astragalus superimposed anteriorly. It produces a weak joint anatomically for the remainder of the foot, which is necessary to sustain it, has been removed. Equinous deformity and tilting of the os calcis also occur because of the weak and unopposed pull of the tendo achilles.

The leg may be divided into thirds, lower, middle and upper, for the discussion of the formation and the relative value of stumps obtained.

Stump length in the leg is measured from the insertion of the internal hamstring tendons into the tibia to the bone end of the stump when the leg is flexed at 90 degrees.

Amputation through the lower third, Syme's amputation, is really a supramalleolar amputation first described in 1843 by Sir James Syme of Edinburgh.[37] The stump end is covered by a flap from the heel. The saw line is through the tibia and fibula one-half inch above the articular

surface of the tibia. The os calcis is dissected from the heel and this flap is brought up over the bone ends. This amputation has remained popular in England and in Canada.

Wilson, of Boston, in his excellent description of the operation,[38] states its chief merits as follows: (1) It provides a stump capable of transmitting an entire body weight to the ground by direct end pressure without pain. (2) It removes only the foot and therefore leaves the stump with greatest leverage power. (3) It is less crippling, in that less tissue is removed than in an amputation through the leg. The patient, therefore, is able to walk about his room without an appliance. Wilson states further that the skin on the plantar surface of the heel must be healthy and non-damaged, and that wound infection practically always causes failure.

Huggins, who also advocates this amputation, states in his excellent manual on amputations[39] that a Syme's stump which is not entirely end bearing is inferior for functional purposes to an amputation through the leg. He enumerates some four or five reasons for failure, and states that unsatisfactory Syme's stumps are not uncommon. Too frequently these stumps are incapable of direct end bearing without pain, which may be the fault of the operator. The stump end is bulbous and more or less insecure, because of the sub-plantar fat in the heel flap covering it, making its prosthesis very apparent and unsightly. It can be fitted only with difficulty by the average prosthetist. The leg is encased in a leather laced bucket extending to the knee, reinforced with metal, either in front or behind or on the two lateral surfaces. This appliance, however, does not necessitate the objectionable thigh corset and shoulder strap required by an amputation through the leg. Care must be exercised in dissecting the heel flap or its blood supply may be interfered with, causing necrosis and failure. This stump when wholly end bearing possesses certain advantages for the laborer.

Pirogoff, in 1853, modified Syme's amputation, making an osteoplastic stump.[40] His idea in doing this was not primarily to do an osteoplastic amputation but to overcome the difficulty he encountered in dissecting the heel flap according to Syme's method. He brought up a heel flap containing the posterior surface of the os calcis and united it to the sawed section of the tibia and fibula just above the articular cartilage of the tibia. This stump has the disadvantages of the osteoplastic amputation, as stated above. In addition, it is too long to be properly fitted with a prosthesis allowing ankle motion. The Syme's stump is superior.

Amputation through the lower third of the leg gives unsatisfactory stumps in comparison with those through the middle third. The lower third of the tibia has no muscular insertion and is covered mainly by tendons. The circulation of the skin is poor, the stump tends to become

cyanotic, heals poorly and will not stand up well under the new work required of it by the prosthesis. It is fitted with difficulty, due to its length, as it interferes with ankle motion, and from a cosmetic standpoint the prosthesis must be unduly large just above the ankle. It possesses no advantage because of its length, as an amputation through the middle third of the leg gives ample length for maximum leverage. The lower third of the leg should not be selected as the point of election for amputations.

An amputation through the middle third of the leg is considered the point of election in all below knee amputations. The old point of election, a hand's breath below the knee, handed down to us by Paré, Larrey and the peg leg period of the Civil War, gives a stump too short to afford maximum leverage for the present day prosthesis. The saw line should be selected at a point to give a seven inch length in the adult of average height.

In amputations through the upper third of the leg, all available bone length must be conserved. A stump length of two inches, however, can be fitted with suitable prosthesis. In stumps of less than five and one-half inches, all available skin should be used, allowing the suture line to fall where it will. The amputation at this level is performed by the same method as just described in the middle third. In stumps containing four inches or less of bone length of tibia, the fibula, with its head, should be removed as it gives a better stump from a prosthetic standpoint. It is more easily fitted and allows more weight bearing on the outer surface of the tibia. This removal should not be subperiosteally.

In the medical history of the Civil War, disarticulation through the knee joint was considered to have given a better stump from a prosthetic standpoint than an amputation through the thigh. Estes and Bickham recommended this amputation. The stump resulting from a disarticulation of the knee joint is not considered satisfactory. The condyles of the femur are unequal in length and uneven in contour. When covered with healthy skin they are usually tender to pressure. When covered with scar tissue they are useless. The stump end is bulbous and when fitted with a prosthesis makes the thigh appear longer than its fellow.

A disarticulation of the knee joint is not recommended, except as indicated in the Guillotine amputation to control infection.

It is of interest to note that amputation of the knee joint was first performed in America in 1824 by Nathan Smith.[41]

The thigh, like the leg, is roughly divided into thirds, lower, middle and upper. Stump length is measured from the perineum to the bone end of the stump when the latter is lying in full extension parallel to the opposite thigh. Function in the thigh stump rapidly

diminishes above the lower third. The site of election is in the lower third of the thigh through the cancellous bone just above the condyles of the femur. Owing to the strong contractility of the massive muscles of the thigh, conical stumps are more prone to develop in amputations through it than in the upper extremity of the leg.

All stumps in the lower third of the thigh should be wholly weight bearing and should be so fitted as to give the maximum functional value.

Gritti,[42] in 1857, described his supracondylar osteoplastic amputation, which was later modified by Stokes,[43] in 1870. Stokes used the same method except for slight modifications of the flaps. This stump has the objections of all osteoplastic amputations. When successful it gives an ideal end bearing thigh stump.

Sabanaieff[44] described a transcondyloid femoro-tibial method in which the saw line was transcondylar. To this sawed surface he applied a bone flap with adherent soft parts which he cut from the anterior surface of the tibia. This stump contained the whole knee joint and the patella. To form the anterior flap, skin of three fingers' breadth below the tubercle of the tibia is required. This operation is difficult to perform, infection and reaction in the retained synovial membrane of the knee joint is always possible, the stump end is bulbous and when fitted with a prosthesis, causes the knee to fall below its fellow. It is not considered an operation of election.

In 1902 Wilms,[45] after sawing through the end of the femur, covered it with the quadriceps extensor tendon, which he sutured to the periosteum on the posterior surface of the femur.

The supracondylar tendoplastic or aperiosteal method of amputation is through the supracondylar portion of the femur, just below the shaft, and through the cancellous bone of the condyles. The quadriceps tendon, which is included with the long anterior skin flap, is cut close to its insertion into the patella, brought over the end of the sectioned femur and sutured to the fascia posteriorly.

The hip joint should present a buttock equal in size and contour to its fellow, without redundant or excessive muscle below the level of the tuberosity of the ischium. The tuberosity of the ischium covered with its normal soft parts, forms the base and weight bearing point of the hip stump. Excessive muscle produces a flabby, insecure seat which becomes pinched by the prosthesis. The skin should be rounded out and free from sulci or redundancy. The suture line should be as far as possible from the rectum to prevent post-operative soiling.

This amputation, as already stated, was first successfully performed by Larrey in 1803. In America it was done by Brashear of Maryland in 1806.[46]

Shock in this operation is usually severe, regardless of the amount

of blood lost. It can be lessened by blocking the sciatic and anterior canal nerves. Intravenous salt solution and plasma and often blood transfusion are used to combat shock. It will, of course, be increased in those cases where trauma has necessitated the amputation because of the shock incident to the injury itself.

Larrey practiced primary ligation of the common femoral. He then cut the flaps and disarticulated by transfixion. Guthrie controlled the circulation by digital pressure of the femoral under Poupart's ligament, and cut the flap from without inward.

Wyeth[47] in 1890 introduced his method of control of blood supply, using his famous pins which held a rubber tube tourniquet in place. He did a circular amputation of the soft parts and bone well below the perineum and later disarticulated the joint and removed the remaining bone through an external incision, leaving large flabby muscle flaps which were quilted together. His method is more or less followed in the external ratchet incision, in which the trochanter and neck of the femur are removed subperiosteally and a large stump produced. This procedure will not give the ideal stump.

The anterior ratchet method with the long postero-internal skin fascia flap, with primary ligation of the common femoral, as described by Huggins, is considered the ideal.

The femur may be disarticulated, sawed through the neck or amputated below the great trochanter, as elected. Either method gives an equally satisfactory stump, requiring only slight modification of the skin flaps.

A discussion of amputation of the upper extremity is omitted except for mention of Vanghetti's work in 1897-98 in cineplastic amputations.[48] It was as a result of his observations in the Italian-Abyssinian War that Vanghetti's theory was first conceived. In his experiments on chickens he found that if the distal end of a muscle or tendon were freed from its insertion and covered with skin, the muscle would retain its voluntary power of contraction. His operation was first performed on man in 1900 by Ceci of Pisa, a surgeon and friend of Vanghetti. This work was followed by Sauerbruch in Germany and by DeFrancesso and Galleazzi in Italy. Some five different types of "motors" have been developed by this method to activate the prosthesis of the upper extremity.[49]

Baer and Wilson,[50] in compliance with orders from the Chief Surgeon A. E. F. in France, made a complete study of the subject and visited several hospitals in Italy where this work was being done. In their conclusion they stated that cineplastic amputation was then in the experimental stage and that the results so far obtained were of little practical value in improving the working efficiency of the *amputé*.

In the present paper, a vast amount of pertinent detail has been omitted. The writer has been concerned, mainly, in sketching the gradual

evolution of the art of amputation from earliest times to a period ending some years after the last war when our experience was perhaps at its maximum. There has been no attempt to cover the subject as it is related to the present war nor to examine into the merits of chemotherapy, the use of dried blood cells in non-healing stumps, refrigeration anesthesia or other recent procedures.

In closing it should be mentioned that a definite procedure in amputations has been outlined in Circular Letter No. 91 of April 26, 1943 from the Office of The Surgeon General, to serve as a guide on the subject of amputation to the end that at the earliest possible moment, a sound and definite procedure would be followed, eliminating unapproved practices on the part of medical officers who are not fully acquainted with the cumulative experience of the past twenty-five years.

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Impressions of Medical Libraries and Library Science in Latin-America

By EILEEN R. CUNNINGHAM

AS I STEPPED on board a Pan American strato-clipper on August 2, 1943, I did not realize with what significance I would later come to regard that date—for it marked the beginning of a most interesting experience. This chance to survey medical libraries in three of the South American republics and to actually work in one of them has proved a liberal education for me. Letters from friends and colleagues have indicated that others may be interested in my notes concerning this trip and that is my reason for recording some of them here.

I traveled entirely by air with the exception of a train trip over the Andes into the interior of Peru. The first flight was from Miami to Balboa in the Canal Zone crossing the Caribbean Sea at an altitude of 16,000 feet. The next day our journey was resumed down the West coast of South America. We flew over Colombia and Ecuador, crossed the equator, flew over and along the Peruvian coast and landed in Lima in the late afternoon. I stayed in Peru six weeks. From Peru I flew to Cali, Colombia, then on to Bogotá the next day, for a stop of ten days. Then I flew back to the Canal Zone and the next day continued over Panama, Costa Rica, Nicaragua and Honduras to Guatemala where I stayed a couple of days and then flew to Mexico City where I remained two weeks entering the United States by plane at Brownsville, Texas. From Texas to Nashville I travelled by train.

The trip was made under the auspices of the Rockefeller Foundation and of the Institute of Inter-American Affairs and everywhere I was given the opportunity of meeting and knowing many persons connected with the medical, scientific and literary life of the countries I visited. Everywhere facilities were extended for visiting the universities, medical schools and hospitals.

My primary objective and longest stay was in Lima, Peru, where I acted in the capacity of consultant to Dr. Carlos Monge, Dean of the Facultad de Medicina, Universidad Nacional, Mayor de San Marcos de Lima (fig. 1), in regard to the reorganization of the medical library.

The charter of the famous University of San Marcos was granted

in 1551, and many distinguished persons have taught on the staff of the Facultad de Medicina. One of the most interesting of these was the brilliant and gifted physician Hipólito Unanue frequently designated as "one of the fathers of American medicine." He was a pioneer in inaugurating medical research, a leader of the renaissance of medical teaching in Peru, and it was largely due to his efforts that the Lima Anatomical Amphitheater was organized in 1792, and the San Fernando Medical School, later the Facultad de Medicina, was opened in 1811.

Immediately opposite the entrance to the Facultad de Medicina is a bust of Daniel E. Carrión, the medical student who lost his life when in

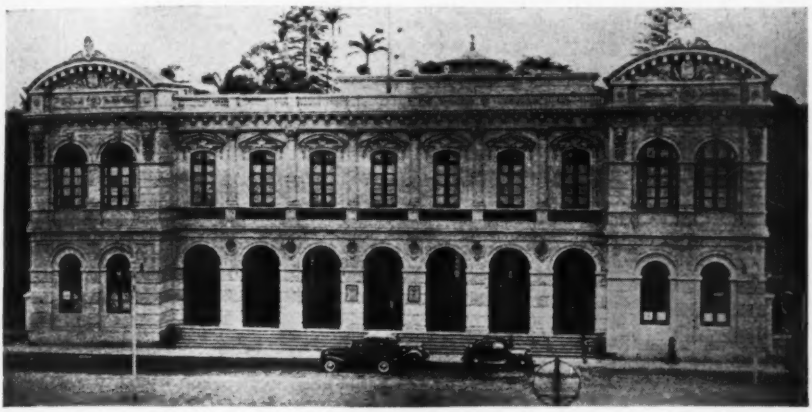

FIG. 1. Façade of the Facultad de Medicina, Universidad Nacional Mayor de San Marcos de Lima.

1885 he inoculated himself at Lima with *Verruga peruana (Oroya fever)* in order to verify its infectiousness. Since that time many important studies of this disease have been carried out in Peru.[12]

An interesting review of medical research in Latin America was published by the Pan American Union in 1933,[2] and medical librarians will find it a valuable addition to their collections.

At present some interesting research is being carried out at the Instituto Nacional de Biología Andina which is connected with the Facultad de Medicina. Its laboratories at Huancayo and Morococha are situated high in the Andes, and there Dr. Carlos Monge,[3-6] Dr. Alfredo Hurtado,[7-9] and others working with them, have done many investigations on both the physiology and diseases of life at high altitudes.

I had the opportunity of visiting the laboratory at Morococha. The trip was made in the laboratory automobile, an ascent from less than 500 feet of sea level to approximately 16,000 feet in two hours and a half. Dr. Hurtado who drove proved to be a marvelous chauffeur which

FIG. 2. Guests at farewell luncheon given for the author by the members of the faculty of medicine of the University of San Marcos and their wives at Los Angeles, an Andean mountain resort near Lima.

was lucky for us as the roads were full of breath-taking surprises. I do not believe there is any finer scenery in the world than one finds on this trip. The towering Andes, the Indians in their vivid dress descending the mountain passes with their stately llamas who gaze disdainfully while their masters urge them to the inner side of the road are sights one never forgets. The little crater lakes of an indescribable blue green which nestle among the peaks as you approach the crests and above all the brilliant sun, the cloud effects and the cold fresh air so characteristic of the Andes at that time of year all contributed to a unique experience. Although we carried oxygen none of us had to use it, but on our arrival we found that one of the experimental animals we were carrying up with us had succumbed during the trip. A glance at the animal's lungs after it was sacrificed was enough to make me quite willing to heed admonitions not to "overdo" at first.

The medical library of the Facultad de Medicina in Lima occupies one half of a hollow square surrounding an inside patio in the main building of the medical school. The library is on the second floor and there are wide galleries opening on the patio and here the students frequently sit and study. The building is historically interesting but, from the standpoint of library method, difficult to organize effectively. Since senior students work in the Dos de Mayo Hospital and the Hospital Arzobisbo Loayza which are situated at a considerable distance from the school, this decreases the use of the main library, so from every standpoint a new building closer to the Loayza Hospital would be preferable. The library contains many important books and periodicals, but the periodical collections need building up in certain fields.

I usually spent each morning with Miss Margarita Summers working in the library. Miss Summers is now studying at the Western Reserve University School of Library Science prior to taking up her post as Librarian at the Facultad de Medicina Library (Fig. 2. Miss Summers is seated on the ground to the left). Afternoons were spent in appointments and in seeing the various medical institutes and hospitals, as it was necessary to learn something of the medical set-up if plans were to be worked out intelligently. Late afternoons and evenings were spent in social contacts. As I am one of those who believe in working while on the spot and consigning to paper impressions that are still fresh and can be verified on the ground, the writing of reports was wedged into the siesta hour and from 11 P.M. to 1 A.M., the only hours available for this type of work. Plans for reorganization also included sketches for a new library, should a building program become possible. Dr. Monge and the members of the faculty did everything in their power to make my stay pleasant and gave me splendid facilities for work.

Some of the most pleasant contacts I had were with the students. The medical course takes seven years, so there are many more students

at a given time than in our schools, and much of the work of the students in their senior years is equivalent to the duties of an intern in our country. The President and Secretary of the Student Center arranged a picnic for me at the temple of Pachacamac. This marvelous old Inca ruin is on the coast about an hour's drive from Lima. After a tour of the ruins and much discussion of Inca history we had a picnic lunch. During lunch some of the students played their guitars and sang native Peruvian folk songs, and there was dancing.

FIG. 3. Hospital Obrero, Lima, Peru, opened in 1940 and operated under a social security plan.

Among the interesting medical institutions in Lima are the National Institute of Hygiene, the Institute of Social Medicine, the National Radiotherapy Institute, the Cancer Institute, and the National Children's Institute with a special hospital for children.

The Hospital Obrero (Workers' Hospital) is a marvel of modern hospital construction (fig. 3). It was opened in 1940 and contains 650 beds. It operates on a social security plan and smaller hospitals using it as a model, are in the process of construction. The Hospital Arzobisbo Loayza has approximately 600 beds and the Hospital Dos de Mayo about 800. There is also a small British-American hospital. This hospital was formerly in Callao, the port of Peru, but when the building was destroyed by the earthquake of 1940, the hospital was transferred to

Lima and is now installed in its new building. Both this hospital and the Obrero hospital have good schools of nursing. There are in all about 19 hospitals in Lima. On the whole, however, facilities and modern equipment for the teaching of medicine have not kept pace with the development of hospitals.

One cannot leave the subject of Lima or Peru without mentioning the splendid museums which display treasures from the ancient Inca and pre-Inca civilizations. The ceramics of the Incas frequently represent human faces and figures that are exceptionally true to life, and some of them record conditions having medical significance. Examples of some of the most interesting have been illustrated in one of the monograph publications of the Museo Nacional with explanatory annotations by Dr. Juan B. Lastres of the Facultad de Medicina,[10] who has also published other works on the history of Inca medicine.[11] The society of medical history of Peru, which was founded in 1939, publishes the *Anales de la Sociedad Peruana de Historia de la Medicina* as its official journal.

I found time before leaving Peru to spend an unforgettable week in the high plateaus of the Andes and in Cuzco, the ancient Inca capital, "ciudad eterna," as the Peruvians sometimes call it. Nothing I could possibly say would in any way prepare you for its charm; it is one of the really rare places left in this world, and let us hope that in these days of rapid change, its beauty and quaintness will remain unscathed. There, miles away from the rest of civilization, are beautiful colonial churches superimposed on ancient Inca foundations and enclosed by ancient Inca walls, and an interesting University dating back to the latter part of the 16th century. Here in colonial days a son of Murillo taught painting in the famous Cuzco School of Art which developed a distinctive style of its own, many examples of which are to be found in Lima and the churches of Peru.

In Bogotá, Colombia, I visited the new Biblioteca Nacional. The mountain views from this lovely modern building are among the most beautiful in Bogotá. The collection contains some excellent historical material and at present it is being classified and catalogued, but the Library is handicapped in this work by a lack of sufficiently trained personnel.

I also saw the new University center which is under construction. There is no central University Library so far, but several smaller libraries which house special collections in different subjects. Some day the University hopes to have a central library. The Medical School collection is of considerable size and is well organized. At present, it is quite far away from the University Center but may be moved there in the future.

Bogatá has several large hospitals, the San José Hospital and the San

Juan de Dios being two of the largest. The San Juan de Dios includes a pavilion for lepers and another for patients with tropical diseases. The Hospital Samaritana is a new hospital which was almost completed at the time of my visit. A new National School of Nursing has recently been established at Bogotá, and I had the opportunity of meeting Miss Helen Howitt and Miss Joanna Schwarte, the two North American nurses who are to direct the school.

The Rockefeller International Health Division Yellow Fever Laboratory was a very interesting place to visit. Important investigations on yellow fever are going on here and the director will not permit visitors who have not been vaccinated against yellow fever to go through the laboratories. These laboratories contain all sorts of queer jungle animals and birds who are being studied as representing possible reservoirs of infection from which mosquitoes can transmit the disease.[14, 15] In this laboratory, I also had the opportunity of seeing the tiny fly, Phlebotomus verrucarum, in various stages of its life cycle. This insect is the transmitting agent in *Verruga peruana*—the dread disease of certain Andean valleys. My stay in Bogotá was all too short and I longed for more time to see the many interesting things I had to leave unvisited.

In Mexico City I found many collections rich in biological and medical material. I visited many medical and scientific libraries, among them, the Library of the Hospital General, the University Medical School Library, the Instituto de Biología with its laboratories situated on the lovely lake in Chapultepec Park, the Academia Nacional de Medicina, the Escuela de Salubridad e Higiene, the Departamento de Salubridad Pública, The Instituto de Salubridad y Enfermedades Tropicales, the Academia Nacional de Ciencias, The Instituto Antropológico and many others. This scattering of medical material causes certain difficulties for those engaged in research, and the need for a large central medical library close to the hospitals is realized by those interested in the development of medicine in Mexico City and they hope to be able to organize such a library at some future date.

My visit to the Hospital General included the Typhus Fever Laboratories and the Brucellosis Laboratories where Dr. M. Ruiz Castañeda,[13] a former co-worker of Zinsser's, is carrying on interesting work on these diseases. I visited the Hospital Juarez and the recently opened Hospital del Niño which is modern and beautifully organized. Mexico City is so large and the distances between libraries great, so I found the two weeks' time at my disposal entirely inadequate in which to visit all of the scientific libraries, and medical institutions.

Each of the countries visited had many distinctive characteristics but as I cannot discuss each in detail it might be just as well to summarize certain factors which seemed more or less common to the libraries of all of them. For the greater part the medical libraries showed the

influence of European culture and science, especially French. This was true both in book content and in the pattern of library arrangement, methods and administration. Several factors are responsible, before the beginning of the second World War, many scientists from South America studied in Europe and the ties between France and Peru for example, were especially close, there having been numerous interchanges of professorships, lectureships and scholarships. Moreover, French medical schools invited Peruvian students to attend courses without charge and every effort was made to reduce the travel and living expenses of these students.

The use of French text-books was therefore very natural, particularly as they were furnished at reasonable prices. Today there is much interest in North American books but their widespread use is handicapped by several factors, one being delays and difficulties in transportation due to the war, and even more important the fantastically high prices of our texts in comparison with the living scale of the country. One can hardly expect a struggling young medical teacher, research worker or physician to pay almost a month's salary for a book, even if he longs to own it.

Recently a group of publishers representing various important publishing houses in the United States made a tour of some of the most important Latin American Republics in order to study the situation. At present, the Book Publishers Bureau has a Foreign Trade Committee working on the distribution of books to foreign countries and it is to be hoped they will take steps to solve the problem.

Both in medical and university libraries I found librarians eager to build up their collections of books in the English language. In this connection, the American Library Association—"Books for Latin America Project" is accomplishing a great deal by the distribution of books to various cultural centers including medical and technical books as well as those of purely literary interest.

The question of translations into Spanish and Portuguese is also an important one as there are many practicing physicians and students who cannot read English fluently enough to make use of the original, but again the necessity of making such translations available at low cost is of prime importance. With increased use of texts in English, there is an acute need for good bi-lingual Spanish-English and Portuguese-English medical dictionaries. The only Spanish one available is by Moll;* it is inadequate, being little more than a vocabulary, was published in 1926 and is now out of print. There is a French-Spanish medical dictionary and a German-Portuguese medical dictionary, but not one of them is really good.

* Moll, A. A.: Spanish-English medical dictionary. . . . 2d ed. Chicago, American Medical Association, 1926.

In all the countries visited there was a marked interest in the status of librarianship as a profession and in technical training for librarians. Already several schools are being organized and several are already operating. Although some of them are in countries which I did not visit, I think these new developments are of such interest to all librarians that I will discuss them briefly here.

One of the first of these schools was the "Institute" held in Bogotá during the summer of 1942 which lasted six weeks. It was directed by the American Library Association under a grant from the Rockefeller Foundation. While such short courses are admittedly inadequate for training purposes, they have awakened great interest in library methods and professional training. This was evidenced by the organization of the Asociacion de Bibliotecarios de Bogotá in 1942. The members of this group are actively interested in the advancement of the library profession in Colombia and through the President of their Association, have requested aid in establishing a permanent school of librarianship in Bogotá.

On January 15, 1944, the first course of the Escuela de Bibliotecarios opened in Lima. The director of the School is the distinguished Chief of the Biblioteca Nacional, Dr. Jorge Basadre. The staff will consist of Peruvian teachers and visiting teachers. Among the North Americans who will serve in that capacity are Dr. Raymond Kilgour, Miss Elizabeth Sherier and Miss Margaret Bates. Dr. Jorge Aguayo of Havana who has studied library science in the United States on a Rockefeller Foundation Scholarship will also teach. Dr. Aguayo is the author of a manual in Spanish on cataloging and classification.[1] There were 300 applications for the course this year, but only 35 students could be accommodated. Preference is being given persons already working in libraries or persons going directly into library positions. Later, after the completion of the new building for the Biblioteca Nacional which will replace that destroyed by the disastrous fire of May, 1943, the school will be housed there and can probably take care of more students.

A permanent library school is being organized in connection with the Escuela de Antropologiá in Mexico City. Dr. Rubin de la Borbolla, director of the Escuela, is in charge of the new course. Only students who have completed "Preparatoria" will be considered for admission and the course will extend over a three year period. In that time, the students will take a considerable amount of general academic work, i.e. in history, literature, and languages. The total amount of library science will be at least as much as schools in the United States give in the first year. On completing the full three-year curriculum the students will qualify under the law as professional librarians. Special courses will be offered for in-service librarians not seeking degrees.

The Library School of the Escola Livre de Sociologia e Politica in Sao Paulo, Brazil, has been given a grant by the Rockefeller Foundation for a five year period in order to expand the facilities of the school. A one-year course for full time students will be given under the school's director, Dr. Rubens Borba de Moraes. It will be limited to thirty students to be selected from Brazilian library personnel and students who have been selected for library positions. Provision for practical training will be afforded by the Municipal Library of São Paulo.

FIG. 4. Children's Room in the Biblioteca Benjamin Franklin, Mexico City. Photograph by courtesy of Dr. Rudolph H. Gjelsness, Director.

From March 23, 1943 to November 27, 1943, a school of Library Science was in progress under the auspices of the Engineer's Association of Uruguay.[16] The school was the result of the efforts of Ing. Federico E. Capurro who for years had been interested in library organization. Arthur E. Gropp, Librarian of the American library, Biblioteca Artigas-Washington, in Montevideo, assisted in the organization. Two North Americans, Jeanne Hereford Williams and Dorothy M. Gropp both with some experience in Latin American libraries were in charge of the practice work and the Ateneo de Montevideo offered the use of its library as a laboratory. From one hundred and fifty applicants fifty-six were selected. Preference was given to library employees and to teachers. Ing. Capurro is trying to get his government to establish a national school of library science as a part of the University of Montevideo.

There will be a six to eight week Library School in Quito, Ecuador, during the coming year. The school will be attached to the Central University of Quito. It will be under the direction of Alfredo Chavez, Librarian of the University Library and Mrs. Dorcas Worsley Reid who has organized the Library of the Cultural Institute in Quito.

At present there are three North American libraries in Latin America, the Biblioteca Benjamin Franklin in Mexico City, the Biblioteca Americana de Nicaragua in Managua and the Biblioteca Artigas-Washington in Montevideo, Uruguay. They are administered under the American Library Association, International Relations Office. An interesting feature is the use of such libraries by children and young people. In September 1943, 1,399 children used the children's room in the Biblioteca Benjamin Franklin and I found this room (fig. 4) one of the most inspiring sights of my trip.

Another interesting and important development is the addition during the past year of Cultural Attachés to the American Embassies. These men are eminent representatives of their professions, including writers, scientists and professors. They are forming close contacts with the cultural life of the countries in which they are living and are interested in seeing that North Americans who visit these countries meet those Latin Americans with whom they would have interests in common. The State Department cannot be too highly commended for its far-sighted policy in sending representatives of their cultural division to other countries. It is a policy which should receive the support of every North American because true international friendship and understanding can be best achieved by the exchange of ideas through the medium of books and the personal contact of those interested in the cultural and intellectual life of our country and that of other countries. The Attachés with whom I came in contact were keenly aware of the value and importance of libraries and were much interested in the developments in this field.

Another interesting group were the medical men working in the various "Servicios Cooperativos Inter-Americano de Salud Publica," the name varying slightly in the different countries. They co-operate with the scientists of the various countries in the study of such problems as malarial control, nutrition—the establishment of small jungle hospitals, better organization of nursing services and many other aspects of public health.

In trying to summarize some of the impressions from my trip certain facts emerge; as far as medical and scientific libraries are concerned, the material is widely scattered. It is not concentrated in the medical school libraries or a large medical society library as is more often the case in North America. Therefore, the building of union catalogs is very important. In Mexico City such a project is already under way with head-

quarters at the Biblioteca Benjamin Franklin. The first libraries being catalogued for inclusion in this union catalog are the medical and scientific libraries. Many of the libraries do not have adequate storage space for books and this overcrowding and lack of modern stack facilities hampers efficient administration.

The medical students do not have adequate access to the books or card catalogs. However, before this could be brought about effectively, there would have to be much careful groundwork done in training the student body to realize the value of the books and their personal responsibility in regard to careful usage of the material available. This arousing of a sense of responsibility and obtaining the interest and cooperation of the students using the libraries should, and must, precede any attempt to give them increased access to material.

In all of the countries visited I found an interest in improving library facilities both general and special. This development has been retarded by the lack of a sufficient number of technically trained assistants but, as previously stated, steps are being taken to remedy this situation.

One of the most important tasks facing the medical libraries in the countries visited is the preparation of an accurate list of their periodical holdings and a list of their "wants." The work on the Union Catalog in Mexico City will be of great assistance in this regard as far as that city is concerned. Many periodicals lack only a few volumes or even issues. Librarians are anxious to complete their North American periodical files but delays in transportation and expense of transportation are hard to overcome. After the war it may be possible to establish some clearing center where the "wants" of South American libraries could be handled, especially for volumes or issues of North American journals.

The librarians and medical people I met were delightful. Everywhere courtesy and kindness was extended to me and everything was done to make my visits pleasant. One of the most agreeable features of my trip was the opportunity to develop personal acquaintances and there are now many individuals whom I regard sincerely as "amigos mios." I have a very real affection for them and I long some day to return to Latin America, and I hope that many of you will also have the opportunity of going there.

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Medical Medals in the Collection of the College of Physicians of Philadelphia*

By Ella N. Wade

The care and cataloguing of medals is but one of the many duties of the curator of the Mütter Museum and College Collections, therefore, our method is a very simple one, and my paper will be brief.

There are, in the collection of the College of Physicians, 184 medals and 105 badges, quite a number of which are duplicates, but whether a medal is a duplicate or not, it must still be catalogued and cared for.

The care of these merely consists of periodical cleaning to remove the dust that accumulates even in the snug-fitting drawers of the cabinet in which they are stored, polishing those that tarnish and checking occasionally to be sure that each one is in its proper place.

The cabinet that houses the collection was purchased expressly for that purpose and has proved very suitable. The lower part consists of eight shallow drawers. In these the medals are placed in numerical order, using the top drawer first and numbering downward. The glass display case which is built on the top is equipped with adjustable glass shelves. It is divided into two sections by a mirrored partition, which, reflecting the medals, adds greatly to the effectiveness of the exhibit. Small metal easels support the average size medals while the smaller ones are usually arranged in rows on the lower shelves where they may be more easily seen.

My interest in numismatology was very superficial until it became one of my duties to care for the collection and plan new exhibits. I knew nothing about medals and had no special interest in them, never having won any, or in fact, never having known anyone who did. I had little conception of their significance, so preparing for a new exhibition, I chose the ones pleasing to the eye and as nearly uniform in size and shape as possible. It happened that many that I had selected were badly tarnished. This necessitated a session with a soft cloth and a can of metal polish, and I was agreeably surprised to find that beneath the

* Read at a regional meeting of Medical Librarians at Philadelphia, June 11, 1943.

discoloration the bright metal disclosed historical scenes, significant portraits and symbolic pictures, minute, but perfect in detail. I realized that here were indestructible records of medical history and scientific accomplishments; memorials of great events and famous institutions; badges of honor of distinguished men, and in many instances, desirable works of art. Caring for them, I perceived, would be no disagreeable chore, but a diversion both pleasing and fascinating. I find it something of an adventure when new donations come into our possession, to remove any tarnish that may exist and discover what interesting details lie beneath.

The cataloguing is as simple as the care. The medals are numbered consecutively, as they are received. This number is recorded on two labels in India ink. The very small label—to fit the edge of the medal—is attached thereto with shellac and the larger one is pasted to the lining in the bottom of the drawer in the medal cabinet, indicating the place allotted to that particular medal. The number, the name, the description of the medal, the name of the donor and its location in the case are all listed in the catalogue of College Collections.

We also have a donor's file (not alone for medals but for all museum and college possessions) and the medals are also listed in this file under the name of the donor.

Besides these there is a card file or index. This really consists of two files, one numerical and one alphabetical, so there are always at least two cards for each medal, bearing the number, the name, the description, the name of the donor and its location, and often more than two, for frequently one may be filed several ways alphabetically, for example the cards for a medal bearing the head of Ephraim McDowell, struck to commemorate the centennial of the first ovariotomy performed by McDowell in 1809, are filed under M—McDowell, O—Ovariotomy, and C—Centennial, so that with even a meager description and though unfamiliar with the collection, one could easily find desired information about any particular medal.

After a new accession has been numbered and allotted a space in the cabinet, all information concerning it is turned over to the cataloguer on the library staff and cards are again made for the library file, so that visitors to the library, although strangers to the Museum and College Collections, may obtain information from that source.

As previously stated, when it became my task to change the medal display at intervals, those were chosen which made an artistic or symmetrical arrangement, rather than those that would be of numismatic interest. The Curator at the time, Dr. Joseph McFarland (now honorary curator), must have noticed this, for while he complimented me on the appearance of the case, he asked me, in his kindly and diplomatic manner, if I didn't think it would be well to make a display of a certain

class of medals. I agreed, and this lead to an additional way of cataloguing them—that is by classification. This catalogue is a simple loose leaf binder. The collection has been divided into eight classes. They are: (1) Medals of Award, (2) Personal Commemorative Medals, (3) Commemorative Medals of Events, (4) Medals of Institutions, (5) Honorary Medals, (6) Medals of Personal Tribute, (7) Advertising and other Tokens, and (8) Miscellaneous Medals.

This scheme of division has proved valuable to the system of cataloguing for it facilitates the arrangements of new exhibits and makes it

FIG. 1. Jewelled medal presented to Dr. David Hayes Agnew.

very easy to find a certain type of medal when inquiry is made. In doing this we consulted no numismatic catalogue, but have divided the medals into the classes most suitable to our own collection.

Of these classes the most elaborate seem to be the medals honoring such men as Dr. David Hayes Agnew (fig. 1), Dr. S. Weir Mitchell and Dr. Samuel D. Gross. Many of these are of gold and are jewelled. The Copley Gold Medal (fig. 2), presented to Dr. William Hewson as a result of a paper he delivered in 1769, has been passed on to the oldest medical man in the family in successive generations. It was deposited with the College of Physicians of Philadelphia in 1925 and will

remain in its custody, although it still is the property of the surviving medical man of the Hewson family.

Among the medals of institutions, the University of Pennsylvania,

FIG. 2. The Copley Gold Medal presented to Dr. William Hewson.

Bi-centennial medal is not without interest being the last work of R. Tait McKenzie (fig. 3).

The midwifery and advertising tokens are interesting. Among them

FIG. 3. University of Pennsylvania Bi-centennial Medal.

is an entrance token to the Amsterdam Medical Garden in 1758 with the name of the owner engraved thereon.

Among the older medals is one of silver in honor of Conrad Gessner (fig. 4), the German Pliny, presumably struck to commemorate his call to the chair of natural history at Zürich in 1564; also one of

Richard Mead (fig. 5)—a very prosperous practitioner of his day—who inherited the famous gold-headed cane from John Radcliffe. We also have a Golden Angel Touch Piece of Henry VIII, used in the cure of the King's Evil in early times when healing became an attribute of

FIG. 4. The Conrad Gessner Medal (1564).

sovereignty, supposedly having been bestowed by the gods on men who by genius or fortune had been raised above the level of their fellows. The Angel was first ordered struck by Edward IV in 1465. Its name is derived from the figure on the obverse, of the Archangel Michael piercing the dragon.

FIG. 5. The Richard Mead Medal.

An interesting medal of Benjamin Rush, struck during the period in which he was Treasurer of the United States Mint is considered a rarity, as is also an advertising token of Myddelton, a man midwife.

Recently we received a collection of British war medals from Dr. Edward F. Corson. There are twenty-six in the collection, all with the

original campaign ribbons attached and the name of the recipient engraved on the edge of the medal. These were not given for outstanding medical achievement, but all represent awards for medical military services. In this collection is a Waterloo medal (fig. 6) over 100 years old, issued to the Inspector General of their hospital staff. This is unique, since a Waterloo medal to a medical officer is a rarity, especially to a high ranking one.

Among the medals of award we have the Mary Ellis Bell medal presented to the University of Pennsylvania by Dr. Edward B. Krumbhaar in memory of his mother, which is annually awarded to the student

FIG. 6. The Waterloo Medal.

who presents the best piece of medical research work before the Undergraduate Medical Association, and the Walter Burns Saunders medal awarded annually for distinguished service in nursing.

Most of the collection, I presume, would be interesting to a numismatist, and he would see a few not found in any other medal collection.

I have prepared a descriptive list, in fact, almost a complete catalogue of our medals and badges. This will enable anyone who is also in charge of a collection, to make comparison. The numbers at the left are the catalogue numbers allotted to our medals. Where more than one number appears for a medal, duplication is indicated and if that particular medal is lacking in another collection, we will welcome an exchange for one which we do not have.

Our method of cataloguing may be of little value to those in charge of a vast collection and whose entire time is devoted to it, but it is adequate for our purpose and in its simplicity may, in part, appeal to some other cataloguer—at least I hope someone may find a helpful suggestion in it.

MEDALS OF AWARD

618 AESCULAPIUS
641 Ob. Head of Aesculapius facing. ZETESEOS (H)ENEKA (Because of re-
704 search) Signed, R.T.M. '23 (R. Tait McKenzie)
Rev. MARY ELLIS BELL / PRIZE FOR / UNDERGRADUATE MEDICAL RESEARCH / WON BY
125 mm. Bronze.
This medal was presented to the University of Pennsylvania by Dr. Edward B. Krumbhaar in memory of his mother, Mary Ellis Bell, in 1923, and is awarded annually.

644 BIGLOW, Dr. Henry Jacob (1818-1890) Boston, Mass.
Ob. HENRY JACOB BIGLOW / 1818-1890. In depressed circle, bust to left. Signed, V. D. Brenner.
Rev. THE BOSTON SVRGICAL SOCIETY. FOVNDED 1914. In depressed circle, AWARDED TO / panel decorated with laurel FOR / CONTRIBVTIONS / TO THE / ADVANCEMENT OF / SVRGERY
78 mm. Bronze.
Storer catalogue (1931) No. 366.

616 GERHARD, Dr. William Wood (1809-1872)
617 Ob. Bust facing. WILLIAM WOOD GERHARD MEDAL. 1809-1872.
714 Signed, R.T.M. 1925 (R. Tait McKenzie)
Rev. An altar, such as is found on Greek coins of the best period, bearing the classic lamp of knowledge and entwined by a single snake of Aesculapius which gazes at the lamp. THE PHILA / DELPHIA PATHO / LOGICAL SOCIETY / HONORS ZEAL / IN RESEARCH.
50 mm. Bronze.
Known as the Gerhard Medal of the Pathological Society of Philadelphia. It is a replica of the Gold Medal presented to Simon Flexner in 1931. It was modelled for Dr. Arthur Gerhard who presented it to the Philadelphia Pathological Society. The first recipient was Dr. William Welch of Baltimore.

720 NOBEL, Alfred Bernard (1833-1896) Stockholm, Sweden. Founder of the Nobel Prize.
Ob. Bust to left. In front, ALFR. / NOBEL Behind, NAT. / MDCCC / XXXIII / OB. / MDCCC / XCVI
Rev. INVENTAS. VITAM . IUVAT . EXCOLUISSE. PER. ARTES.
In circle, Hygeia to left, laureated and seated drawing water from a rock and supporting a fainting female. In front, book and branches of laurel. Ex. REG. UNIVERSITAS—F. G. BANTING / MCMXXIII—MED / CHIR. CAROL.
68 mm. Bronze. Replica of Banting's Medal.

702. ROYAL SOCIETY OF MEDICINE.
Ob. Hygeia, the daughter of Aesculapius, with snake entwined on left arm, bestowing a wreath upon Research, a kneeling male figure with the lamp of knowledge in his right hand. AVDPICIIS. SOCIETATIS.—.REGIAE . MEDICINAE. Above the head of Research INSTITVTAE / MDCCCV Ex. NON. EST. VIVERE. SED / VALERE. VITA

Rev. Cheiron, the Centaur teaching the young Aesculapius the art of healing. They stand before a spring, the boy holding the plants in his right hand, with a coiled snake between the Centaur's legs. Above a bow with five arrows and the words FINIS / CORONAT OPVS

44 mm. Bronze.

This medal is awarded triennally for valuable contributions to the science and art of Medicine. It was established by Dr. Robert Murray Leslie and was first awarded to Sir Almroth Wright.

630 SARGENT, Dr. Dudley Allen (1849-) Cambridge, Mass.

Ob. DUDLEY . ALLEN. SARGENT . PIONEER. IN. PHYSICAL. EDUCATION Bust to left. Behind neck, 1907. Signed, R. Tait McKenzie.

Rev. A / RECOGNITION / BY HIS / FRIENDS AND STUDENTS Five of the University of Harvard seals arranged in line. Below, AWARDED TO / blank label. On edge, BRONZE

50 mm. Gilt bronze.

Storer catalogue (1931) No. 3189

628 SAUNDERS, Walter Burns

629 Ob. THE WALTER BURNS SAUNDERS MEMORIAL MEDAL Bust of Florence Nightingale facing, slightly to left. In front of neck, FLORENCE / NIGHTINGALE / 1848 Behind neck, R.T.M. / (monogram) '29 Ex. FOUNDED BY / W. L. SAUNDERS . 2nd

Rev. AWARDED TO / lamp of knowledge, laurel branch, blank label / DISTINGUISHED / FOR / SERVICE / IN / THE CAUSE OF NURSING On edge MEDALLIC ART CO. N.Y.

68 mm. Gilt bronze.

673 SEDGWICK Memorial Medal.

Ob. *SEDGWICK * MEMORIAL * MEDAL In depressed circle three nude figures, an adult male and male and female child. To the left MARY DONELSON

Rev. At top, bottom and side rims, twined laurel branches. AWARDED star TO two stars / blank label BY THE AMERICAN / PUBLIC star HEALTH star ASSOCIATION FOR / DISTINGUISHED / SERVICE three stars IN two stars / PUBLIC star HEALTH star / small blank label.

57 mm. Bronze

This medal was first awarded by the American Public Health Association to C. V. Chapin for distinguished service in public health in 1930.

701 UNIVERSITY OF PENNSYLVANIA ALUMNI SOCIETY

Ob. MEDAL OF THE ALUMNI SOCIETY MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA. In center, A thistle with two leaves.

Rev. In crossed laurels, the staff of Aesculapius, upright.

50 mm. Bronze.

This and a prize of $50.00 is offered annually to the member of the graduating class who has attained the highest general average in examinations.

Storer catalogue (1931) No. 6042.

COMMEMORATIVE MEDALS—*Personal*

743 BERNARD, Dr. Claude (1813-1878) Paris, France.

Ob. Bust to right. Signed, A. Borrel

Rev. CLAUDE BERNARD / NE A ST JULIEN (RHONE) 12 JUILLET 1813 / MORT A PARIS . 10 FEVRIER 1878.—MEMBRE / DE L'ACADEMIE FRANCAISE / DE L'ACADEMIE DES SCIENCES / DE

L'ACADEMIE DE MEDECINE.—PROFESSEUR / AU COLLEGE DE FRANCE / A LA FACULTE DES SCIENCES / AU MUSEUM D'HISTOIRE NATURELLE

75 x 120 mm. White Metal.

Storer catalogue (1931) No. 313.

688 BOERHAAVE, Dr. Hermann (1668-1738) Leyden, Holland.

Ob. HERMANNUS—BOERHAAVE Bust to left. Below, and near rim VIVIER F.

Rev. NATUS / VOORZOUTI / PROPE LEIDAM / IN HOLLANDIA / AN. M. DC. LXVIII / OBIIT / AN. M. DCC. XXXVIII. / — / SERIES NUMISMATIC / UNIVERSALIS VIRORUM ILLUSTRIUM / — / M. DCCC. XIX / DURAND EDIDIT On edge, MONOCHII

40 mm. Bronze.

Storer catalogue (1931) No. 406.

642 BUJALSKI, Dr. Ilya Vasiliewitch (1789-1864) Petrograd, Russia.

643 742 Ob. OT IMPERATORSKOI, etc., in Russian. (From the Imperial Medico-Chirurgical Academy and the Russian Medical Profession.) Military bust to right. On shoulder, in Russian, P. BRUST—NITZIN F.

Rev. In Russian, 1864 / IYALYE (etc.) (On the twenty-fourth day of July with supreme permission, to the Emeritus Professor E. W. Bujalski, in recognition of his fifty years of service for his country and for Science.) All in laurel and oak surmounted by star. 62 mm. Bronze.

Storer catalogue (1931) No. 523.

746 CURIE, Pierre et Marie

Ob. UNO INTERNATIONALIS CONTRA CANCRUM. Busts—Pierre facing, Marie, to left. PIERRE ET MARIE CURIE / DECOUVRENT / LE RADIUM / NOVEMBRE 1898.

Rev. Blank.

50 mm. Bronze.

693 CUVIER, Baron Georges Leopold Chretien Frederic Dagobert de (1769-1832) Paris, France.

Ob. GEORGES CUVIER.—NE A MONTBELIARD EN 1769. MORT A PARIS EN 1832. Bust to left. Below, A. BOVY 1834.

Rev. About the periphery in two rows PAIR DE FRANCE. CONCEILLER D'ETAT ET AU CONSEIL ROYAL D'INSTR. PUBL. SECRETAIRE PERP. DE L'ACADEMIE DES SCIENCES. L'UN DES 40 DE L'ACAD. FR. ACAD. LIB. DE L'ACAD. DES BELL. LETT. PROF. AU COLL. D. FR. ET. MUS. D'HIST. NATURELLE &.&. In field, DISCOURS / SUR LES REVOLUT. / DU GLOBE. / RECHERCHES SUR LES / OSSEMENTS FOSSILES. / ANATOMIE COMPAREE. / REGNE ANIMAL. / HIST. DES SCIENCES NATURELLES. / &.&.&. / rosette.

68 mm. Bronze.

This medal was apparently struck to commemorate the death of this distinguished naturalist and comparative anatomist, the founder of paleontology.

716 DELORME, Charles (1628) Physician in Ordinary to the Dauphin.

Ob. Bust to right in costume of the period. 1628 CAROL DELORME REG. CONS. ET MED. ORDINARIOR PRIM AET 43.

Rev. An undechipherable scene. Above, DIIS GENITI POTVERE.

42 x 54 oval medal. Silver.

670 DERCUM, Francis Xavier

Ob. Bust to right. Ex. FRANCIS X. DERCUM. To right of bust, FECIT MCMXXIV / CARL AUGUST HEBER / SCULPTOR.

Rev. Blank.

18 x 13 inches. Bronze plaque.

658 DURANTE, Dr. Francisco ( ) Rome, Italy.
Ob. CHIRURGIAM ROMAE INSTRAURAVIT Bust to left. Beneath bust, A. SIRLETTI.
Rev. FRANCISCO DURANTE / QUINQUECENNALIA / FELICITAR ALVMNI / MDCCCXCVIII.
24 mm. Bronze.
Storer catalogue (1931) No. 934.

719 FLEXNER, Simon
Ob. Bust to left. SIMON FLEXNER. Signed, BASHKA PAEFFSC.
Rev. Gate to Rockefeller Institute. Beneath FROM THE MEMBERS OF THE / ROCKEFELLER INSTITUTE 1935.
82 x 65 mm. Bronze.
Given on the occasion of his retirement from the Directorship of Rockefeller Institute 1935.

738 GALL, Dr. Franz Josef (1758-1828)
Ob. Perpendicularly, FR^COIS J.^PH GALL. Head to right. Below, BARRE F. 1828.
Rev. NE A TIEFENBRUMM G^D DUCHE DE BADE EN 1758 MORT A PARIS EN 1828. In tied laurels, AU / CREATEUR / DE LA PHYSIOLOGIE / DU CERVEAU.
45 mm. Bronze.
Storer catalogue (1931) No. 1167.

603 GESSNER, Dr. Conrad (1516-1568)
Ob. CONRADUS—GESSNERUS. M.D. Bust to right with flat cap. On shoulder, HIG(essner).
Rev. ARCHIAT. PROF PHYS. TIGURIN. Arms, a crested shield bearing lion, eagle, dolphin. Below, MUNIFIC. AUG. / 1564.
34 mm. Silver.
This presumably commemorated the call of Dr. Gessner to the Chair of Natural History at Zürich in 1564.

681 HAHNEMANN, Dr. Samuel Christian Freidrich (1755-1834)
Ob. SAMUEL HAHNEMANN NATUS MISENAE D.X. APRILIS MDCCLV. / DOCTOR CREAT. ERLANGAE—D.X. AUGUST MDCCLXXIX. Head to right. On neck, KRUEGER F.
Rev. MEDICINAE HOMOEOPATHICAE AUCTORI DISCIPULI ET AMICE D.X. Augusti MDCCCXXIX. In field, SIMILIA / SIMILIBUS.
39 mm. Bronze.
Storer catalogue (1931) No. 1434.

689 HALLER, Dr. Albert von (1708-1777)
Ob. ALBERTUS HALLER. Bust to right. Below, CAQUE. F.
Rev. NATUS / BERNAE / IN HELVETIA / AN. M. DCC.VIII. / OBIIT / AN. M. DCC.LXXVII. / — SERIES NUMISMATICA / UNIVERSALIS VIRORUM ILLUSTRIUM / — / M. DCCC. XXI. / DURAND EDIDIT.
40 mm. Bronze.
Storer catalogue (1931) No. 1447.

666 HARTUNG, Dr. Christoforo (1779-1853)
Ob. CHRISTOFORO HARTUNG. I. R. CONSIGLIERE NATO A ROMHILDO IN SASSONIA INFERIORE XI MAGGIO MDCCLXXIX / CREATO DOTTORE L'UNDICI AGOSTO MDCCCXII A VIENNA DALLA ACCADEMIA GIUSEPPINA. Head to left. Below, F. Broggi F.
Rev. I CLIENTI ED AMICI IN SEGNO DI GRATITUDINE ED AMICIZIA MILANO XI MAFFIO MDCCCXLIII. In field, SIMILIA / SIMILIBUS

/ CURENTUR / — / PRIMO / OMEOPATICO / NELLA / LOMBARDIA.
40 mm. Bronze.
Storer catalogue (1931) No. 1474.

756 HEDEN, Dr. Johann August Wilhelm (1760-1836) Dresden, Saxony
Ob. I.A.G. HEDENVS PER X. LVSTRA MEDICVS SAGATVS ET TOGATVS / DRESDAE D. XVI M. IVLII / MDCCCXXXIII. Head to right. On neck, KRUEGER F.
Rev. ORE DOCENS ARTEM DEXTRA FERT ARTE SALVTEM. Aesculapius binding the thigh of a wounded soldier. Below, COLLEGARVM ET AMICORVM / PIETAS.
40 mm. Bronze.
Storer catalogue (1931) No. 1498.

687 HOFFMANN, Dr. Frederick (1660-1742)
Ob. FRIDERICUS HOFFMANNUS. Bust to left. Below, WOLF F.
Rev. NATUS / HALAE / IN MAGDEBURGIGA / AN. M. DC. LX. / OBIIT / AN. M. DCC. XLII. / — / SERIES NUMISMATICA / UNIVERSALIS VIRORUM ILLUSTRIUM / — / M. DCCC. XXIII. / DURAND EDIDIT.
43 mm. Bronze. On edge, MONACHII.
Storer catalogue (1931) No. 1567.

665 HOSACK, Dr. David (1769-1835) New York, N.Y.
Ob. DAVID—HOSACK, M.D. Head to right, the hair brushed upwards. Signed, FURST F.
Rev. ARTS AND SCIENCE. A short column and many emblems: lyre, spade, staff of Aesculapius, mounted sphere, bust, mallet, palette with brushes, note book, square and compass and paint tubes. Ex. FURST F.
34 mm. Bronze.
Storer catalogue (1931) No. 1604.

695 HUMBOLDT, Alexander von (1769-1859)
Ob. ALEXANDER AB HVMBOLDT / NAT XIV SEPT. MDCCLXIX. Head to left. On truncation, C. PFEUFFER F.
Rev. FLORA SVBT. / IRRIT. VEG. ET. AN. / ITER. AMERIC. / GEOGR. PLANT. / DISQ. GEOL. ET / MAGNI . / LIN . ISOTH. in heavy tied oak wreath. Signed, G. LOOS. DIR.
40 mm. Bronze.

696 HUMBOLDT, Alexander von (1769-1859)
Ob. In depressed oval, surmounted by long garland of oak leaves drawn through two rings, bust facing and to the right. Above, 1769-1859. Ex. between garlands of laurel AL. v. HUMBOLDT. Signed, M & W St
Rev. Blank.
38 x 50 mm. Bronze.
Storer catalogue (1931) No. 1702.

735 JACOBI, Dr. Abraham (1830-) New York, N.Y.
Ob. A. JACOBI. MD. Bust to left. Ex. MCMX. Signed, MOBRAY CLARKE
Rev. Tied laurels. PRESENTED . / . IN. CELEBRATION. OF HIS. / FIFTY YEARS. OF SERVICE. / AT / between laurels . MT . SINAI . HOSPITAL . / . BY . THE . ASSOCIATED . / ALUMNI . / between rosettes MDCCCLX / MCMX. On edge MED. ART CO.
50 mm. Bronze.

604 LAVATER, Johann Caspar (1741-1801) Zurich, Switzerland. Physiognomist.
Ob. JOH. GASPARUS—LAVATER Bust to left, with four strips of braid and four buttons on coat. Below, LEVEQVE . F

Rev. NATUS / TURICI /HELVETIORUM / AN. M. DCC. XLI. / OBIIT / AN. M. DCCC.I. / — / SERIES NUMISMATICA / UNVERSALIS VIRORUM ILLUSTRIUM / — / M.D.CCC.XVIII. / PARISIIS—DURAND EDIDIT
40 mm. Bronze.
Storer catalogue (1931) No. 2029.

745 LEIDY, Prof. Joseph (1823-1891)
Ob. 1st PRES. AMERICAN ASSN. OF ANATOMISTS. 1888-91. Below, JOSEPH LEIDY. 1823-91 Head to right. To left, R.T.M. (monogram) '38
Rev. TO / CELEBRATE / FIFTY YEARS OF / ACHIEVEMENT / 1888-1938 Laurel branch. Around edge, MEDALLIC ART CO. N.Y.
63 mm. Bronze. (R. Tait McKenzie)

653 LISTER, Joseph (1825-1912) London, Eng.
Ob. Bust to left in depressed circle. Lower right hand corner N. C. JACOBS 1926.
Rev. Blank.
134 x 173 mm. Bronze plaque.
The original is in the University of Rochester Medical School.

602 LONG, Dr. Crawford Williamson (1815-1878) Athens, Georgia.
625 Ob. TO CRAWFORD W. LONG. FIRST TO VSE ETHER AS AN ANAESTHETIC IN SVGERY / MARCH 30TH 1842. FROM HIS ALMA MATER / Bust to left, seated administering ether to a patient. In front of forehead 1815 / 1878 Ex. upon a label between thistle branches CLASS OF '39 / PENNSYLVANIA Behind neck, R. TAIT MCKENZIE / — / 1912
Rev. Blank.
75 mm. Light gilt metal.

686 MALPIGHI, Dr. Marcello (1628-1694) and Sbaralea
Ob. MARCELLVS . MALPIGHIVS. BONON. PHIL. ET. MED. COLLEG. Bust to left. Below, s.v.
Rev. 10. HIERONYMVS. SBARALEA. DOC. COLLEG. ET BONON. ANAT. LECT. EMERIT. Bust to left.
36 mm. Bronze.
Storer catalogue (1931) No. 2298.

672 MEAD, Dr. Richard (1673-1754) London, Eng.
Ob. RICHARDVS MEAD. MED. REG. ET S.R.S. (Socius Regiae Societatis). Draped bust to right. Below, L PINGO F. LABOR. EST—ANGVES-SVPERARE intersected by moon and radiant sun. An infant seated holding serpent by the throat. At sides of armorial shield, in exergue, N. AV. XI—MDCLXXIII / O.F. XVI—MDCCLIV
40 mm. Bronze.
Storer catalogue (1931) No. 2407.

660 OLLIER, Dr. Leopold (1830-1900) Lyons, France.
Ob. Bust to left in robe. Below, LEOPOLD OLLIER / 1830-1900
Rev. DOCTEUR / LEOPOLD OLLIER / CHIRURGIEN—MAJOR / DE L'HOTEL-DIEU / DE LYON / PROFESSEUR DE CLINIQUE / CHIRURICAL / A LA FACULTE DE MEDECINE / — / LES VANX 2 DECEMBRE 1830 / LYON 25 NOVEMBRE 1900 / — Below, view of hospital and Rhone Bridge.
48 x 72 mm. Bronze.
Storer catalogue (1931) No. 2648.

685 PARE, Dr. Ambroise (1509-1590)
Ob. AMBROISE—PARE. Portrait bust in costume of the period, to right. Below, Depaulis F.
Rev. NE / A LAVAL / MORT / EN M. D. XC. / — / GALERIE METALLIQUE / DES GRANDS HOMMES FRANCAIS. / — / 1819.
40 mm. Bronze.

654 PASTEUR, Dr. Louis (1822-1895)
Ob. LOVIS—PASTEVR Bust to left, (in skull cap) Signed, behind neck, O. Roty
Rev. CENTIEME ANNIVERSAIRE Ex. 1822-1922. In field, DE LA / NAISSANCE / DE / PASTEUR / — / 27 DECEMBRE—
38 mm. Bronze.

610 PILCHER, Dr. Lewis Stephen (1845-) Brooklyn, N.Y.
682 Ob. . LEWIS STEPHEN PILCHER. Bust to right. Below, C. KECK. SC.
Rev. Laurels twisted together TO / COMMEMORATE / FIFTY YEARS / OF PRACTICE / SVRGEON AVTHOR / EDITOR / PATRIOT / 1916 On edge. MEDALLIC ART CO. N.Y.
50 mm. Bronze.

657 REDI, Dr. Francesco (1626-1697) Arezzo, Italy.
Ob. FRANCISCVS . REDI . PATRITIVS. ARETINVS. (Three-cornered points) Bust to right. Below, M. SOLD. 1684
Rev. Many mythical figures. Below, CANEBAM
87 mm. Bronze.

609 REVERDIN, Dr. Jacques Louis (—) Geneva, Switzerland.
Ob. Above, A JAQUES LOUIS REVERDIN Bust to left. Below, at right A CARL-ANGST Ex. SES AMIS, SES ELEVES / GENEVE, LE 16 JUIN 1910
Rev. Blank.
48 x 68 mm. White metal.

655 ROSS, Sir Ronald, K.C.B., K.C.M.C., F.R.S., N.L.
Ob. Bust, in gown, to left. Behind head, perpendicularly, SIR. RONALD. ROSS In background, Ross Institute pictured. In lower left hand corner ROSS / INSTITUTE / LONDON Along left edge signed, F. BOWCHESTER 1929 On metal plate below, COLONEL SIR RONALD ROSS, K.C.B., K.C.M.C., / F.R.S., N.L., MAJOR INDIAN MEDICAL — / SERVICE R^{ETB} DIRECTOR-IN-CHIEF, THE/ROSS INSTITUTE AND HOSPITAL FOR / TROPICAL DISEASES / PUTNEY HEALTH, LONDON. HON' PRESIDENT OF THE FIRST / CONGRESS OF THE ITALIAN SOCIETY / OF TROPICAL MEDICINE & HYGIENE / HELD AT TURIN 30TH SEP^{T} 2ND OCT 1928.
This plaque is 127 x 150 mm. and the plate or label 157 x 80 mm. White metal, both mounted one above the other on a black wooden plaque. This cast is a replica of the original made under Sir Ronald Ross' direction and presented by him to the Italian Society of Tropical Medicine and Hygiene. Its first meeting was held in Turin in 1928.

668 RUSH, Dr. Benjamin (1745-1813) Philadelphia, Pa.
691 Ob. BENJAMIN RUSH M:D: OF PHILADELPHIA.:. Bust to left with neckcloth under collar. Under shoulder F
Rev. The Schuylkill River flowing from side to side. In rear, the setting sun with mountains and clouds. Large trees in foreground. To right, Sydenham (the name of his country place.) In front, a block of stone on which

are READ / THINK / OBSERVE Upon the stone on open book. Ex. A. MDCCCVIII Signed M. Furst Fec.
41 mm. Bronze.
Storer catalogue (1931) No. 3097.
It is of interest that this medal was struck during the period in which Rush was treasurer of the United States Mint.

600 SENN, Dr. Nicholas ( ) Chicago, Ill.
684 Ob. Bust to left.
Rev. To / NICHOLAS SENN / THE / MASTER SVRGEON / MEMORIAL / FROM HIS FELLOWS—NOVEMBER 11, 1905.
51 mm. Bronze.

692 SOEMMERING, Dr. Samuel Thomas von (1755-1830)
Ob. S. TH. A. SOEMMERING NAT. THORUNI D. XXVIII IAN. MDCCLV DOCT. CREAT. GOTTINGAE D. VII APR. MDCCXXVII rosette Head to right. In front, the staff of Aesculapius. Below, G. LOOS. DIR. C. PFEUFFER FEC.
Rev. ANATOMICORUM PRINCIPI ANIMAE ORCANA QUI APERUIT ARTIS VIRIQUE CULTORES . D. VII. APR. MDCCCXXVIII rosette The base of the brain.
50 mm. Bronze.
Storer catalogue (1931) No. 3389.

637 SOUTHARD, Elmer Ernest (1876-1920) Boston, Mass.
Ob. Bust to left. Below, ELMER ERNEST SOUTHARD / INSPIRING LEADER, UNSELFISH / GIVER OF HIMSELF TO SCIENCE / AND TO HUMANITY Signed, BLASCHKA PAEFF On edge, Gorham Co.
Rev. Blank.
69 x 92 mm. Bronze.

669 VIRCHOW, Dr. Rudolph Ludwig Karl (1821-1902) Berlin, Germany.
Ob. RVDOLPHVS. VIRCHOW . POMERANVS. CIVIS. BEROLINENSIS Bust to right. Behind, AETAT: In front, LXX Below, A Scharff—in script.
Rev. To left, Mercury (Research), nude, unveils with his right hand a statue of Isis Polymamma, against which leans a sketch of the Pathological Institute of Berlin. Science seated with right hand on book and left holding a skull on sarcophagus, is surrounded by medical emblems. Ex. OMNIS. CELLVLA. A. CELLVLA.
175 mm. Bronze.
Storer catalogue (1931) No. 3643.

736 WELCH, Dr. William Henry (1850-) Baltimore, Md.
Ob. Bust to right, slightly facing. Ex. WILLIAM H. WELCH On upper right rim, V. D. BRENNER. SC. / 1910
Rev. Crossed branches of laurel and rose. Above, FROM HIS FRIENDS In lower left hand corner, VDB (monogram)
57 x 77 mm. Bronze.

635 WIDAL, Prof. F.
683 Ob. Bust facing left. In front of head PROF-^{R} F. WIDAL Behind neck,
718 Aug-te Maillard in script.
Rev. Female figure bearing the torch of knowledge. On tables either side are a flask, a pipette, test tubes, microscope, mortar and pestle and books. Beneath, SERO-DIAGNOSTIC—CYTO-DIAGNOSTIC / CURE DE—CRISE / DECHLORURATION—HEMOCLASIQUE / PHENOMENES —AZOTEMIE / DE CHOC
68 mm. Bronze.

COLLECTION OF BRITISH WAR MEDALS

These medals were issued to Medical Officers and enlisted men of the R.A.M.C. The original campaign ribbons are attached. They were not given for medical achievements but represent awards for medical services. The name of the recipient is engraved on the edge of each medal.

777 WATERLOO MEDAL 1815

Ob. GOERGE P—REGENT Head to left. Signed, T. WYON JUN. 2

Rev. Seated winged female figure. Above WELLINGTON Below, WATERLOO Ex. JUNE 18 / 1815 Signed T. WYON On edge, F. R. GRANT, INSP. GEN. OF HOSP. MEDICAL STAFF Campaign ribbon: Dark red with narrow black edge.

36 mm. Silver.

760 SUTLEJ, 1846

Ob. VICTORIA—REGINA Crowned young head to left. Signed T. WYON

Rev. Winged Victory holding a wreath with implements of war at her feet. ARMY—OF—THE—SUTLEJ Ex. SOBRAON / 1846 On edge, HOSPL. SERJT GIBSON SAWDON 9TH LANCERS Campaign ribbon: Blue with red edge.

36 mm. Silver.

761 PUNJAB, 1849

Ob. VICTORIA—REGINA Crowned young head to left. Signed, T WYON

Rev. Army laying down arms before a mounted soldier. TO THE ARMY OF THE PUNJAB Ex. MDCCCXLIX On edge, G. SAWDON, 9TH LANCERS. Campaign ribbon: Dark blue with chartreuse edges. Two silver bars, GOOJERAT / CHILIANWALA

36 mm. Silver.

780 INDIA MEDAL, 1854

Ob. VICTORIA—REGINA Crowned young head to left. Signed T. WYON

Rev. Victory crowning a warrior On edge, ASST-SURGN W. H. ADLEY . 1st SEIKH INFTRY. Campaign ribbon, Dark red and blue stripes. Two silver bars, BHOOTAN / NORTHWEST FRONTIER

36 mm. Silver.

757 CRIMEA 1854

Ob. VICTORIA—REGINA Crowned young head to left. Signed, T. WYON Ex. 1854

Rev. Victory crowning a warrior. To the left CRIMEA Signed, B. WYON SC On edge, SURGEON, HENRY KIALLMARK. OTTN MED: STAFF. Campaign ribbon: Light blue with narrow gold edge. As bar, a silver oak leaf and two acorns with SEBASTOPOL

36 mm. Silver.

775 INDIAN MUTINY MEDAL 1857-1858

Ob. VICTORIA—REGINA Crowned young head to left.

Rev. Victory with wreath and shield beside a lion. Above, INDIA Ex. 1857-1858 On edge, SUPG SURGN J. WILKIE, M.D. Campaign ribbon, red and white stripe. Two silver bars, RELIEF OF LUCKNOW / LUCKNOW.

36 mm. Silver.

778 EAST AND WEST AFRICA 1873-1874

Ob. VICTORIA—REGINA Crowned, veiled head to left. Signed, L. C. WYON

Rev. Battle scene. On edge, 1273. LANCE SERJN S. WOODHOUSE. A.H.C. 1873-4 Campaign ribbon, yellow and black.

36 mm. Silver.

762 AFGHANISTAN 1878-1879-1880
Ob. VICTORIA REGINA—ET IMPERATRIX Crowned head to left.
Rev. Elephant with rider and soldiers mounted on horses and marching on foot. Above, AFGHANISTAN Ex. 1878-79-80 On edge, SURG: J. C. LUCAS. BO: S&M. Campaign ribbon, dark green with red edges.
36 mm. Silver.

758 SOUTH AFRICA 1879
Ob. VICTORIA—REGINA Crowned head to left. Signed T. WYON
Rev. Lion crouching against a background of thistles. Above, SOUTH AFRICA Below four arrows and a shield. On edge, SURGN. G. ASHTON. M.B.A.M. DEPT. Campaign ribbon, gold with dark blue stripes.

759 EGYPT 1882
Ob. VICTORIA REGINA—ET IMPERATRIX Crowned head to left. Signed, L. C. WYON.
Rev. A sphinx. Above, EGYPT Below, 1882 On edge, 4562. PTE. J. CAREY. A. H. C. Campaign ribbon, dark blue and white stripes. Silver bar, SUAKIN 1884
36 mm. Silver.

763 INDIA 1885-1887
Ob. VICTORIA—REGINA Crowned head to left. Signed, WYON
Rev. Victory crowning seated warrior. On edge, Surgn. Major J. Lucas I. M. S. (in script) One silver bar, BURMA 1885-7 Campaign ribbon, dark blue and red stripes.
36 mm. Silver.

776 HONG KONG PLAQUE MEDAL 1894
Ob. PRESENTED. BY. THE. HONG. KONG. COMMUNITY (maltese cross) In depressed field, FOR / SERVICES / RENDERED / DURING THE PLAGUE / OF / 1894
Rev. Sick man being ministered to by male and female; male figure repelling the figure of Death who has spear raised above the lying figure. To the left Chinese words. Ex. 1894 On edge, PRIVATE M. BRIGGS, S.L.I. Campaign ribbon, red with gold stripes.
36 mm. Silver.

764 INDIA, 1894-1895
Ob. VICTORIA—REGINA Crowned head to left. Signed, WYON
Rev. Victory crowning a warrior. On edge in script, Surgn. Lieut: J. J. Bourke. I.M.S. Silver bar, WAZIRISTAN 1894-5. Campaign ribbon, dark blue and red stripes.
36 mm. Silver.

766 SUDAN 1896 (Queen's)
Ob. VICTORIA REGINA—ET IMPERATRIX Bust with crown and scepter to left. To right, DES
Rev. Seated winged Victory holding palm branch in right hand, a wreath in left. Flags in background. Below, SUDAN On edge, 8763. L CPL: H. YEOMAN. R.A.M.C. Campaign ribbon, black, yellow and red.
36 mm. Silver.

779 EAST AND WEST AFRICA
Ob. VICTORIA—REGINA Crowned head to left. Signed, L. C. WYON
Rev. Hand to hand combat. On edge, ASST. C SURGEON D.J.M. CONACHER G. C. CONSTBY. One silver bar, 1897-98 Campaign ribbon, yellow and black stripes.
36 mm. Silver.

765 CHINA 1900
Ob. VICTORIA REGINA—ET IMPERATRIX Crowned bust to left.
Rev. Palm, cannon, shield and other implements of war. Above, ARMIS EXPOSCERE PACEM Below, CHINA / 1900 On edge, in script, Captn. J. J. Bourke. I. M. S. Campaign ribbon, red with gold edge.
36 mm. Silver.

769 SOUTH AFRICA (KING'S) 1901-1902
Ob. EDWARDVS VII REX IMPERATOR Bust to left.
Rev. Victory on a height extending a wreath with army marching below. Sea and ship to left. Above, SOUTH—AFRICA On edge, 11064 PTE. F. SLATTERY R.A.M.C. Two silver bars, SOUTH AFRICA 1902 / SOUTH AFRICA 1901 Campaign ribbon, green, white and gold striped.
36 mm. Silver.

771 BRITISH GREAT WAR 1914-1918
Ob. GEORGIVS V. BRITT: OMN. REX ET IND: IMP. Head to left. Signed, B.M.
Rev. Naked figure mounted on a horse and carrying a sword. The sun above. On ground, shield, skull and crossed bones. On edge, 11064 PTE. F. SLATTERY, R.A.M.C. Campaign ribbon, light blue with black and dark blue edge.
36 mm. Silver.

722 VICTORY MEDAL 1914-1919
Ob. Figure of Victory
Rev. Within laurel wreath THE GREAT / WAR FOR / CIVILISATION / 1914-1919 / . . . On edge, 66088 CPL. F. SLATTERY R.A.S.C. Campaign ribbon, multicolored.
36 mm. Gilt.

773 1914-1915 Medal
Ob. Three-pointed star surmounted by a crown. Over the star two crossed swords. On top of all, a laurel wreath with V within G at the base. In center on ribbon 1914-15
Rev. 65088 / CPL. E. SLATTERY. R.B.M.C. Campaign ribbon, red, white and blue.
44 mm. from point to point. Brass.

768 SOUTH AFRICA (QUEEN'S)
Ob. VICTORIA REGINA—ET IMPERATRIX Crowned bust to left.
Rev. Victory extending a wreath above marching men. To left the sea and a ship. Five silver bars, ORANGE FREE STATE / TRANSVAAL / RELIEF OF LADY SMITH / TUGELA HEIGHTS / CAPE COLONY On edge, 11064 PTE. F. SLATTERY. R.A.M.C. Campaign ribbon, red, orange and dark blue.

767 KHEDIVE SUDAN
Ob. Unknown characters.
Rev. Shield, behind which are grouped banners, flags and firearms. On edge 8763 CPL. H. YEOMAN M.S.C. SEPTR. 1896 One silver bar, HAFIR Campaign ribbon, one wide blue stripe and two wide gold stripes.
39 mm. Silver.

782 MERITORIOUS SERVICE MEDAL
Ob. GEORGIVS V BRITT: OMN: REX ET IND: IMP: Bust to left. Signed, B.M.
Rev. In tied laurels with crown above FOR / MERITORIOUS / SERVICE / — / On edge, 48010 S. SJT.—A.Q.M. SJT. S. O. GARRETT. R.A.M.C. Campaign ribbon, dark red with three gray stripes.
36 mm. Silver.

783 GENERAL SERVICE MEDAL
Ob. GEORGIVS V BRITT: OMN: REX ET IND: IMP: Head to left. Signed, B.M.
Rev. Figure of Victory with trident in right hand and a wreath in left. To left, a sword, upright and a winged emblem. On edge, 7254660 PTE. E. KASSELL. R.A.M.C. One silver bar, KURDISTAN Campaign ribbon, purple and green stripes.
36 mm. Silver.

780 LONG SERVICE AND GOOD CONDUCT MEDAL
Ob. Armor and implements of war.
Rev. FOR / LONG SERVICE / AND / GOOD CONDUCT / — . . . — / On edge, 152. 2ND. CORPL. W. YOUNG. A.H.CORP Campaign ribbon, dark red.
36 mm. Silver.

770 LONG SERVICE AND GOOD CONDUCT MEDAL
Ob. GEORGIVS V BRITT: OMN: REX ET IND: IMP: Bust to left.
Rev. FOR / LONG SERVICE / AND / GOOD CONDUCT / — . . . — / On edge, CORPL. F. SLATTERY R.A.M.C. Campaign ribbon, dark red with gray edge.

COMMEMORATIVE MEDALS—*Events*

703—ACADEMY OF MEDICINE, Paris. Struck in honor of the Centenary of French Academy of Medicine, with unlimited distribution.
Ob. The goddess Hygeia (representing the Academy of Medicine) seated in a library, and surrounded by various medical instruments and a snake drinking from a cup. CENTENAIRE DE L'ACADEMIE DE MEDECINE Ex. 1820-1920
Rev. The same figure standing in the same surroundings looking into the future, where large factories are dimly visible. Ex. 1920—On edge BRONZE.
67 mm. Bronze.

753 CANADIAN NATIONAL EXHIBITION 1923. Dr. Frederick Banting.
Ob. In depressed circle, head to right. Behind neck, E HAHN SC. Below head to left, triangular platform with CNE (monogram) and laurel at base. A mouse and oak leaves on top. . DR. FREDERICKC . / BANTING .To right staff of Aesculapius. On plate below, THE / CANADIAN NATIONAL / EXHIBITION / TORONTO . 1923
Rev. Exhibition buildings. Below, AWARDED TO—
38 x 62 mm. Bronze. Mounted on a small bronze easel.

611 CHOLERA—VIENNA 1832. Struck to commemorate the epidemic of Cholera but not is recovery. (1831-1837)
Ob. A group of people with Aesculapius holding the wrist of a reclining woman, while with the other he repels a figure of Death (a skeleton with a scythe and bat's wings) who holds a dying man. To right, F. ROGAT 1932. Three other adults and two children complete the group. INVASION DU CHOLERA / EN 1832
Rev. A wreath.
83 mm. Lead.

621 HUGER, Dr. Francis Kinloch (1773-1855) Charlestown, S.C. To commemorate the daring attempt by Huger to rescue the Marquis de Lafayette from Olmutz.
Ob. Bust to left with queue. Beaded border. At sides, 1775 / fleur de lys—1855 / fleur de lys. Below, TO . COMMEMORATE / THE . DARING . ATTEMPT . TO . RESCVE . THE / MARQVIS . DE . LAFAYETTE

(between fleurs de lys) / FROM . THE . FORTRESS . OF . OLMUTZ / BY / FRANCIS . KINLOCH . HVGER / OF . THE . CLASS . OF / 1797 On truncation R. TAIT MCKENZIE 1909.

Rev. Reduced Replica of Bronze Medallion / by R. Tait McKenzie / in / Medical Hall / University of Pennsylvania / Unveiled November 5, 1909.

78 mm. Gilt.

Storer catalogue (1931) No. 1677.

730 LUSITANIA MEDAL (Replica) To commemorate the sinking of the Lusitania 1915

Ob. The sinking Lusitania. KEINE BANN WARE / DER GROSS DAMPFer / —LUSITANIA— / DURCH EIN DEUTCHES / TAUCHBOOT VERSENKT / 6 MA 1 1915

Rev. People buying tickets from a skeleton at the ticket window. GESCHAFT UBER ALLES / CUN. LINIE / FAHRKARTEN AUSGABE / K.G.

55 mm. Green Bronze.

667 MEDICAL CONGRESS, Cairo, Egypt, 1902. To commemorate the first Egyptian Medical Congress.

Ob. Ier CONGRES DE MEDECINE. 19-24. DBRE Staff of Aesculapius, with serpent drinking. Above, CAIRE Below, 1902.

Rev. Sun rising behind desert on which three pyramids, sphinx and palm trees. Above, ABBAS JILM

33 mm. Brass.

700 MEDICAL CONGRESS, VIII International. London, 1881.

Ob. VICTORIA QUEEN OF GREAT BRITAIN—AND IRELAND: EMPRESS OF INDIA Crowned, veiled bust to left. On shoulder, L. C. WYON, FEC.

Rev. INTERNATIONAL MEDICAL CONGRESS, LONDON / JAMES PAGET, PRES. WILLIAM MAC CORMAC, HON. SEC. GEN. In circle. Aesculapius, laureated and with serpent staff, blessing three kneeling persons, one of whom is a man with crutch, and the others a woman with bandaged head, and a mother with child in arms. Behind, globe and flying Death. Ex. 1881 Signed, T. TENNIAL D.—L. C. WYON F.

75 mm. Bronze.

Storer catalogue (1931) No. 6307.

722 MEDICAL HISTORY, IX International Congress, Bucharest, Rumania 1932.

Ob. Aesculapius and Hygeia full length relief. AL IXiea CONGRES MEDICINEI . Ex . BUCURESTI. ROMANIA . 10. 18 SEPT. 1932.

Rev. A mythical river scene.

50 mm. Bronze.

749 MICROBIOLOGY, Third International Congress for, New York 1939.

751 Ob. STUDENT OF DISEASE / THEOBALD SMITH Head to right. Lower left hand corner, 1859, lower right hand corner, 1934

Rev. THIRD INTERNATIONAL CONGRESS / FOR MICROBIOLOGY In center NEW / YORK / 1939

50 x 50 mm. Bronze.

750 OXFORD OPHTHALMOLOGICAL CONGRESS, 1917—Robert Walter Doyne F.R.C.S.

Ob. ROBERT WALTER DOYNE F.R.C.S. Bust facing.

Rev. 1st READER / IN / OPHTHALMOLOGY / OXFORD UNIVERSITY / OXFORD / EYE HOSPITAL / FOUNDER / OXFORD / OPHTHALMOLOGICAL / CONGRESS / July 1917

64 mm. Bronze.

678 OVARIOTOMY, Ephraim McDowell (1771-1830) Louisville, Ky. To commemorate the first ovariotomy.

Ob. TO COMMEMORATE THE FIRST OVARIOTOMY / EPHRAIM MCDOWELL Bust to right. Below at left F ZIEGLER Ex. 1809-1909

Rev. THE AMERICAN / GYNECOLOGICAL SOCIETY Within re-entrant serpent a diademed female, seated to left with infant in lap and laurel in left hand and erect staff tipped with hand in right. At right, 1876 Below, F ZIEGLER

72 mm. Bronze.

Storer catalogue (1931) No. 2405.

634 PHYSIOLOGY, International Congress, Edinburgh, 1923. William Harvey (1578-1657)

Ob. WILLIAM HARVEY Bust to left. Ex. 1578-1657

Rev. INTER / NATIONAL / PHYSIOLOGICAL / CONGRESS / three leaves / EDINBURGH / 1923

38 mm. Gilt.

713 PHYSIOLOGY, XIII International Congress, Boston 1929. (William Beaumont)
741 Ob. WILLIAM . BEAVMONT . — . A.D. 1785-1855. Bust to left. On shoulder, I. M. Miller

Rev. Two naked figures holding a torch while standing on the rounded side of a partially pictured globe. XIII / INTERNATIONAL / PHYSIOLOGICAL / CONGRESS / BOSTON / 1929 On edge MEDALLIC ART CO. N.Y.

50 mm. Bronze.

721 PHYSIOLOGY, Lazzaro Spallanzani (1729-1799) XIV International Congress, Rome Italy 1932.

Ob. In high relief, bust to left LAZARRO SPALLANZANI—1729-1799—On shoulder E. BROZZI

Rev. An eagle with extended wings standing on a column on which E X F / 1932. In field, XIV / CONGRESSO—INTERNAZIONALE / DI FISIO—LOGIA / ROMA 29*viii* 3*ix*

50 mm. Bronze.

656 PHYSIOLOGY, I. M. Sechenov, Fifteenth International Congress, Russia 1935.

Ob. Bust facing, name (in Russian) to right.

Rev. Russian inscription around periphery. XV / CCCP / 19 (separated by sickle and mallet) 35

728 PLAGUE AT BARCELONA

Ob. Religion and medicine, female figures, caring for a sick person. Angel above. PIETAS—GALLICA Ex. SAVIENTE IN BARCINONAM / PESTILENTIA / MDCCCXXI Signed, GAYBARD INV.

Rev. MORTE . VENALEM. PETIERE. PALMAN . In field with laurel on one side and palm on the other, V. VIRI. MEDICI / QVORVM . PTIMVS. OCCVBVIT. / MAZET . / PARISET . / BALLY . / FRANCOIS . / AUDOUARD . / —SANCTI—MONIALES . II . / SANCTO. CAMILLO. DEVOTAE. / LVDOVICI . XVIII . REGNT / ANN. XXVIII.

48 mm. Bronze.

690 PRIESTLEY, Joseph. This medal was struck to commemorate Priestley's departure from England to spend the rest of his days in Northumberland, Pennsylvania, in a home which State College perpetuated as a Priestly Museum.

Ob. JOSEPHUS—PRIESTLEY. Bust to right. Below, PHIPSON F.

Rev. I DECUS I NOSTRUM MEIORIBUS UTERE FATIS . In field, APR: VIII / BRITTANNAE / LITORA LINQUENS / COLUMBIAM ADVENIT / JUNII IV / MDCCXCIV . / —

54 mm. Bronze.

636 PSYCHIATRIC, International Congress, Amsterdam, 1907.
Ob. WILHELMINA—KONINGEN Diademed head to left. On truncation, F. PONDER 1907
Rev. In crossed and tied branches of palm and laurel, CONGRES / INTERNATIONAL / DE / PSYCHIATRIE / NEUROLOGIE / PSYCHOLOGIE / ET / ASSISTANCE / DES ALLIENES Ex. B.—U. / 1907 / 2-7 SEPT. / O AMSTERDAM O
40 mm. Bronze.
Storer catalogue (1931) No. 6333

640 PUBLIC HEALTH. To commemorate the semicentennial meeting of the American Public Health Association 1922.
Ob. FOVNDER. AMERICAN PUBLIC HEALTH ASSN. / STEPHEN SMITH M.D. LL.D. Bust to right. Below, tied laurel and ivy branches. To left, lamp of learning.
Rev. TO / COMMEMORATE THE / SEMICENTENNIAL MEETING / OF THE AMERICAN / PVBLIC HEALTH ASSOCIATION / 1872—NEW YORK—1922 / NOTEWORTHY BECAVSE OF THE / PARTICIPATION OF ITS FOVNDER / DR. STEPHEN SMITH / BORN FEB. 19. 1823. Blank label.
68 mm. Bronze.

731 SESQUICENTENNIAL, Philadelphia, Pa. 1926
Ob. SESQUICENTENNIAL—INTERNATIONAL—EXPOSITION Below, Liberty Bell, Head of George Washington to right surrounded by stars. Below head, PHILADELPHIA / 1926
Rev. Figure on winged horse carrying palm and torch.
29 mm. Brass.

727 SOCIETE de MEDECINE LEGALE, Paris, France.
Ob. SCIENCE VERITE JUSTICE Serpent and patera, scales, retort, microscope and staff of Aesculapius. Behind, crossed laurel and palm. Ex. 10 FEV. 1868 / ALPHEE DUBOIS
Rev. SOCIETE DE MEDECINE LEGALE DE FRANCE In tied oak wreath closed by rosette above, RECONNUE / D'UTILITE / PUBLIQUE Ex. *
37 mm. Bronze.

752 TUBERCULOSIS, International Congress, Washington, 1908.
Ob. Female, half facing, rising from sea with arms uplifted to the sun. In left hand an hourglass. Behind her, a dragon. At left, LVMEN Signed, V D BRENNER
Rev. In tied wreath of laurel, an eagle to left, perched on oak bough, before stars and stripes. Below, INTERNATIONAL / CONGRESS / ON / TVBERCVLOSIS / WASHINGTON / 1908 / patriarchal cross.
30 x 38 Gilt bronze.

705 UNITED STATES SANITARY COMMISSION, Philadelphia, Pa.
Ob. WE GIVE OUR WEALTH FOR THOSE WHO GAVE THEIR HEALTH FOR US A tent to right, within which a sick soldier whose pulse is felt by a surgeon. A chalice is offered by Hygeia, whose right hand rests on cornucopia filled with parcels. In rear a pile of boxes. Signed, SCHUSELE—PAQUET F.
Rev. IN COMMEMORATION / OF THE / GREAT CENTRAL FAIR / FOR THE / U. S. SANITARY COMMISSION / HELD AT / PHILADELPHIA / JUNE 1864
58 mm. Bronze.

661 VACCINATION (Jenner) To commemorate the centennial anniversary of the discovery of vaccination.

Ob. VACCINATION, MAY 14th / 1796-1896 / . JENNER . Bust to left.
Rev. MEDICAL SOCIETY OF THE COUNTY OF KINGS / rosette In circle, the staff of Aesculapius, upright
37 mm. Bronze.
Storer catalogue (1931) 1801.

706 VACCINATION—Napoleonic Propagation of Vaccination, 1804.
Ob. Head of Napoleon crowned with laurel wreath to right. NAPOLEON—EMP. ET. ROI. On neck, ANDRIEU F.
Rev. Standing figure of Aesculapius and Hygeia, on one side a diminutive cow, on the other a vaccinating scalpel. Beneath platform, LA VACCINE / MDCCCIV . To left, ANDRIEU F. To right, DENON DIR.
40 mm. Bronze.

612 VERDUN, Commemorating the battle of Verdun.
Ob. ON NE PASSE—PAS Head of soldier with sword to right.
Rev. Entrance to a city between palms. Above VERDUN Ex. 21 FEVRIER / 1916

MEDALS OF INSTITUTIONS

619 COLLEGE OF PHYSICIANS, Philadelphia, Pa.
646 to 652 incl. Ob. .COLLEGIVM. MEDICORVM. PHILADELPHIAE. Nude youth, facing, and holding before him a scroll upon which plan for the new library. At sides, below, MDCCLXXXVII—MDCCCCIX (the letter partially in monogram). Ex. NON. SIBI. SED. TOTI.
Rev. At left, a tripod with rams' heads and lions' feet, encircled by serpent and supporting an antique burning lamp. At right, AD. / ARTEM. MEDENDI. / AVGENDAM. MEDIC— / ORVM . PROBITATEM. / EFFICIENDAM . HOM— / INVM. DOLORES . / LAVANDOS . Below, at left in monogram, RTM (R. Tait McKenzie) On edge MED. ART. CO.
70 mm. Bronze.
Storer catalogue (1931) No. 6035

709 DUNDEE INFIRMARY
Ob. DUNDEE HALFPENNY / 1796 In oval, a building, Below, INFIRMARY FOUNDED / 1794 Signed, I.W.I. DESIGN (These words are partly effaced by wear)
Rev. A ship at dock and harbor scene in a sunken demilune, and beneath a coat-of-arms in a sunken oval, with the words DEI DONUM About the periphery MARE ET COMMERCIUM MUS (partly effaced)
27 mm. Copper.

734 HARVARD TERCENTENARY MEMORIAL MEDAL (1636-1936)
Ob. ANNO . ACADEMIAE. HAVARDIANAE. TRECENTESIMO Ex. MDCCCCXXXVI Within a wreath of tied laurel and leaves, three open books on which are VE RI / TAS
Rev. 1636-1936 / OUT OF SMALLE / BEGINNINGS GREAT / ER THINGS HAVE / BEEN PRODUSED BY HIS / HAND THAT MADE ALL / THINGS OF NOTHING / AND GIVES BEING / TO ALL THINGS / THAT ARE
81 mm. Bronze.

724 HOSPITAL, General, Paris (Louis XIV)
Ob. LUDOVICUS XIIII. REX. CHRISTIANISS. Bust of young king to right. Below, I MAVGER. F.
Rev. ALENDIS ET EDVCANDIS PAVPERIBVS. Building. At right Charity with nude infant on her knees. Two others beside her. Ex. AEDES EXTRUCTAE / ET FUNDATAE / MDC. LVI
42 mm. Bronze.
Storer catalogue (1931) No. 5191.

723 Hospital, Val de Grace (Louis XIV) Paris
Ob. LUDOVICUS XIIII. REX CHRISTIANISS. Youthful head to right. Below, L MAVGER. F.
Rev. OB GRATIAM DIV DESIDERATI TRGII PARTVS. Building. Ex. M.DC. L.
41 mm. Bronze.

674 Hospital, Civils Paris.
Ob. Female, erect, to left, with mural crown addressing seated interne, who supports in his lap the head of a man reclining upon a stretcher. At rear. Notre Dame and the facade of the old Ecole de Medecine. Signed, LOVIS BOTTEE
Rev. CENTENAIRE DE L'INTERNAT EN MEDECINE ET EN CHIRURGIE / HOPITAUX CIVILS DE PARIS To left, AN / X / 1902 Upon side of table, EXEMPLAIRE / DE / COLLECTION Signed, L. BOTTEE Female figure above. Male figure writing at table on which are books, microscope, skull and test tubes.
68 mm. Bronze.

725 Hotel des Invalides (Louis XIV)
Ob. LVDOVICVS . MAGNVS . REX. CHRISTIANISS. Head to right. Below, R
Rev. MILITIBVS . SENIO. AVT. VVLNERE. INVALIDIS. Building and grounds. Ex. .1675. R

671 JEFFERSON MEDICAL COLLEGE
Ob. Bust to left. JEFFERSON MEDICAL COLLEGE.
Rev. Tied wreath of oak and laurel. 1825-1925 ALUMNI ASSOCIATION / COMMEMORATING THE / 100TH ANNIVERSARY / OF THE FOUNDING / OF THE COLLEGE / PHILADELPHIA
51 mm. Bronze.

747 JOHNS HOPKINS HOSPITAL
Ob. THE JOHNS HOPKINS HOSPITAL Building. To right HS (monogram)
Rev. In center with a wreath of laurel a snake twined about a winged torch. TO COMME—MORATE / FIFTY YEARS—OF SERVICE / TO HUM—ANITY / SCIENCE and / EDUC—ATION / 1889-1939
58 mm. Bronze.

755 METHODIST HOSPITAL MEDAL
Ob. BISHOP MATTHEW SIMPSON / . FIRST PRESIDENT OF BOARD OF TRUSTEES 1882. Bust facing.
Rev. Hospital buildings. METHODIST EPISCOPAL HOSPITAL / PHILADELPHIA / FOUNDED BY / SCOTT STEWART M.D. / INCORPORATED 1835.
45 mm. Bronze.

708 MONTROSE (Scotland) Lunatic Hospital
Ob. MONTROSE LUNATIC HOSPITAL / ERECTED BY SUBSCRIPTION Building. Below 1781
Rev. MONTROSE—HALF PENNY Arms. Ex 1799 On edge the words are undecipherable.
28 mm. Bronze.

605 PENNSYLVANIA HOSPITAL—Base Hospital No. 10, Philadelphia.
Ob. BASE HOSPITAL NO. 10 U.S. ARMY / PENNSYLVANIA HOSPITAL PHILADELPHIA in two rows about the periphery. Three dots at the bottom. In small depressed circle in center a figure leading an ass upon

EMORY UNIVERSITY
THE A. W. CALHOUN MEDICAL LIBRARY

which another man sits. A third figure greets the two. Below, 1751 May 7, 1917 A hole in top of medal.

Rev. Blank

31 mm. Copper.

707 PRIVATE MEDICAL ESTABLISHMENT.

Ob. PRIVATE MEDICAL ESTABLISHMENT. Ex 1841 In center, Kneeling woman holding an infant.

Rev. PRIVATE MEDICAL ESTABLISHMENT Doctor and patient seated, facing. Above, HONOUR / 1841

21 mm. Copper

698 SCHOOLS OF MEDICINE. Paris

Ob. NAPOLEON—EMP. ET ROI Laureated head to right. On neck AN. DRIEU F. / DENON DIR.T

Rev. ECOLES DE—MEDECINE Aesculapius with staff and Telesphorus, facing. Ex. DENON DIREX / JOUANNIN

41 mm. Bronze.

754 UNIVERSITY OF PENNSYLVANIA, Bi-centennial medal.

Ob. UNIVERSITY / OF / PENNSYLVANIA Shield of the University. In chief, gules, dolphin and books: in ground, a chevron with three plates. The books represent learning, the dolphin is taken from Benjamin Franklin's Arms and the chevron and plates from those of William Penn. Beneath on a ribbon, the motto LEGES—VANAE / SINE MORIBUS On either side of shield 1740—1940

Rev. A herm crowned by two heads back to back, divided by laurel. Facing left, Benjamin Franklin as an old man crowned with bays, to represent the past; facing right, a youth looking to the new light for guidance in the future. In the ground TEMP- / ORIS LUX—ILLUSTRET / ACTI— POSTERITATIS / VIAM Below to left, the lighted lamp of learning. Above to right, an electric bulb with zig-zag rays. At the base C in circle and RTM (monogram) 1938. On edge, BRONZE MEDALLIC ART CO. N.Y.

78 mm. Bronze.

680 UNIVERSITY OF BERLIN 1810 (Three mark piece)

Ob. FRIEDRICH WILHELM III. WILHELM II / UNIVERSITAT BERLIN Two heads to left. To left, 1810. To right, 1910

Rev. Eagle with outspread wings. Crown above. DEUTSCH—REICH 1910 Between * DREI MARCH On edge, GOTT—MITT—UNS Words separated by 2 sprays and a cross. Issued by the German Government to commemorate the centenary of the Könlgliche Friedrich Wilhelms Universitat zu berlin 1910.

HONORARY MEDALS

662 AGNEW, Dr. David Hayes (1818-1892) Philadelphia, Pa.

Ob. In laurel wreath based on diamonds, the staff of Aesculapius obliquely to the right. Above at left, 33 in gold. Below at right, 88 in gold.

Rev. PRESENTED TO / DR. D. HAYES AGNEW / BY HIS MEDICAL FRIENDS / IN COMMEMORATION OF HIS / 50th YEAR IN THE PROFESSION / APRIL 24" 1888 The medallion is attached by chains to a bar from which is suspended a capital A in diamonds.

613 COPLEY GOLD MEDAL.

Ob. G. COPLEY BAR.T DIGNISSIMO Figure seated holding a wreath in right hand and figurine in the other. Surrounded by many emblems. Ex. WILLIAM HEWSON 1769

Rev. SOCIETAS REG. LONDINI Coat of arms. Below, on ribbon, NULLIUS IN VEREA

43 mm. Gold mounted between glass.

733 FOTHERGILL, Dr. Anthony (1733-1813) London, Eng.

Ob. ANTONIUS FOTHERGILL MD. LLD & C Bust to right. Signed, J. VINING F.

Rev. SALUTI—AUGUSTAE Hygeia at right feeding serpent entwined about altar. Ex. SOC. MED. LOND / INSTITUTA / MDCCLXXIII Around edge HOBART AMORY HARE M.D. 1888

45 mm. Gold.

645 FRANKLIN, Benjamin (1706-1790)

Ob. Bust to left. BENJAMIN FRANKLIN. PRINTER. PHILOSOPHER . / SCIENTIST . STATESMAN. / DIPLOMATIST. Behind back, 1706 / 1790. Two palm leaves on two edges.

Rev. Four figures. The female figure writing on a shield. Above, STRVCK . BY . ACT . OF . THE . CONGRESS. / OF . THE . VNITED . STATES . / HISTORY. LITERATURE . / SCIENCE . PHILO- / SOPHY. Beneath, TO. COMMEMORATE. THE. TWO. HVNDREDTH. / ANNIVERSARY. OF. THE. BIRTH. OF. / BENJAMIN FRANKLIN. .M.C.M.V.I. MCA. TS /

1000 mm. Bronze.

This medal was presented to the College by Dr. William Williams Keen on the eve of his 92nd birthday. It was received by him as President of the Philosophical Society at the time that the original in solid gold was given to the French Republic, on the occasion of the 200th anniversary of the Society.

663 FRICKE, Dr. Albert

Ob. Albert Fricke M D / Honored / in his Profession / Beloved by / his Friends / IN UTROQUE FIDELIS (engraved)

Rev. A token of / Friendship and Love / Sep: 13" 1879 (engraved)

39 mm. Gold attached to a gold pin by a red ribbon.

732 GROSS, Dr. Samuel D.

Ob. Initials (in monogram) S.D.G. in jewels.

Rev. PRESENTED / TO / DR. S. D. GROSS / BY HIS / MEDICAL (rosette) FRIENDS / IN COMMEMORATION / OF HIS / 51st YEAR / IN THE / PROFESSION / APRIL 10, 1879 (engraved)

35 mm. Gold, with gold bar and red ribbon.

638 OSLER, Dr. Sir William (1849-1920) Baltimore, Md. and Oxford, England.

Ob. Bust to right. To left, F. VERNON / — / PARIS / MDCCCIII Ex. WILLIAM OSLER

Rev. THE / CHARAKA CLUB / TO / DR. WILLIAM OSLER / MEDICO ILLUSTRI / LITERARUM CULTORI / SOCIO GRATISSIMO / MARCH 4th 1905.

Presented by the Charaka Club to Dr. Osler and to his guests at the dinner given by the club in his honor.

78 x 106 Bronze.

Storer catalogue (1931) No. 2663.

679 POZZI, Dr. Samuel (1846—) Paris, France.

Ob. PROFESSEUR. SAMUEL. POZZI . —DE L'AC^MIE DE MEDECINE Bust to left in robe and with Cross of the Legion of Honor. On truncation, J.C. / CHAPLAIN / 1905

Rev. TRAITE—DE—GYNECOLOGIE A nude, agonized woman clings to an

erect and laureated female who protects her from a robed skeleton which leans against an operating table.
68 mm. Bronze.
Storer catalogue (1931) No. 2872.

664 RAFINESQUE, Constantine Schmaltz
Ob. Female head in helmet, to right. Below, DUBOIS
Rev. In circle in tied laurels SOCIETE / DE GEOGRAPHIE / — / A / M. G. S. RAFINESQUE / POUR SON MEMOIRE / SUR L'ORIGINE / DES RAGES NEGRES / ASIATIQUES / 1832 Ex. Letters undecipherable.
32 mm. Gold.

694 VLEMINCKX 1853, Belgium
Ob. J. E. VLEMINCKX INSPECT^eur GEN^a l—DU SERVICE DE SANTE DE L'ARMEE BELGE Military bust to left. Signed, LEOPOLD WIENER
Rev. Tied laurel wreath (open). At the opening a snake entwined about an object. In field, A L'ORGANISATEUR / HABILE, / A L'ADMINISTRATEUR / INTEGRE, / AU CHEF DEVOUE / — / LES OFFICIERS DU /SERVICE SANITAIRE / 1853
62 mm. Bronze.
Storer catalogue (1931) No. 3654.

MEDALS OF PERSONAL TRIBUTE

740 DONALDSON, H. H. PH.D. M.D.
Ob. HENRY H. DONALDSON—NEUROL-OGIST Head to left. In front of face, perpendicularly AETATIS SUAE LXXX RTM (R. Tait McKenzie) 1937 PRESIDENT LENAPE CLUB
Rev. Blank. Large Bronze plaque.

615 DRUMMOND, Dr. William Henry (1854-1907) Montreal, Canada.
Ob. Bust to left. At left, WILLIAM / HENRY / DRUMMOND / 1854-1907. Creator / of / Johnnie / Corteau / Old Doctor / Firset / Philorum / Juneau / The Cure / of Calumet / Poleon / Dore / Josetta / and / Little / Batteese / Behind back, from / his friend / R. TAIT McKENZIE. Souvenier / du / Vieux Temps.
Rev. Blank.
50 mm. Bronze.

620 GRENFELL, Dr. Sir Wilfred T.
Ob. WILFRED GRENFELL—OF LABRADOR Head to left. Below, RTM (R. Tait McKenzie)
Rev. Blank. 8 inches. Bronze.
Storer catalogue (1931) No. 1385

633 JACKSON, Dr. Chevalier
Ob. CHEVALIER JACKSON. MASTER OF HIS ART Head to left. Ex. FROM HIS FRIEND AND ADMIRER R. TAIT MCKENZIE. To right RTM (monogram) 1925
Rev. Blank. 11 inch medallion. Bronze.

622 JONES, Sir Robert (—) Liverpool, Eng.
Ob. KNIGHT COMMANDER OF THE BATH / LT. COL. ROYAL ARMY MEDICAL CORPS / Military bust to right. At right, FRCSE / FRCS / INSPECTOR / OF / ORTHO / POED / ICS. / From / his / fri- / end / R. Tait McKenzie. RTM / (monogram) 1917. Ex. ROBERT JONES.
Rev. Blank. 138 x 175 mm. Bronze.

624 KEEN, Dr. William Williams (1837-1932) Philadelphia, Pa.
Ob. Scroll. Chirurgiae: anatomiaeque: magister: / anno: aetatis: / lxxiii: /

scroll Three quarter bust to right, in cap and gown, with partially outstretched hands. Below at right R. Tait McKenzie / mdccix. Ex. on ribbon William Williams Keen M.D.
103 x 180 Light gilt metal

Rev. Blank. This is a reduction from the original portrait plaque modelled for life in 1909 on half-size scale. Life-sized bronze in the Library of Brown University.

623 KEITH, Sir Arthur

Ob. MAN OF SCIENCE—SIR ARTHUR KEITH FRCS. FRS / MD. LL.D. Below FROM HIS FRIEND R. T. MCKENZIE Head facing right. To left RTM (monogram) 1930.

Rev. Blank. 10 inch medallion. This medallion was modelled from life in 1930 in the Laboratory of the Royal College of Surgeons in London, as a personal tribute to an old friend.

626 MITCHELL, Dr. Silas Weir (1829-1913) Philadelphia, Pa.

Ob. S. WEIR MITCHELL. / MD. PADUA LLD. EDIN. / MCMII-MCMXIV / OF THE / FRANKLIN / INN
Bust three quarters to right with robe. A book in right hand, opened by forefinger. Ex. Heads of Homer and Hippocrates between garlands. To right RTM (monogram) R. Tait McKenzie 1915

Rev. Blank. 98 x 172 mm. Light gilt metal. This is a reduction of the original portrait plaque. It is a variant of the first medallion, but without the cap and is in the entrance hall of the Franklin Inn Club. 100 reductions were made for members of the club and for friends.

627 MITCHELL, Dr. Silas Weir (1829-1913) Philadelphia, Pa.

Ob. Head to right.

Rev. Blank. Sketch in plaster taken from life to Silas Weir Mitchell by R. Tait McKenzie (on slip of paper—typewritten)
7 inch medallion.

601 STORER, Dr. Horatio Robinson (1830-1922) Newport R.I.
631 Ob. Bust to left. At right, beneath shoulder, a small head of Hercules.
632 Ex. TO THE MASTER IN SVRGERY / MEDICAL NVMISMATIST / AND LOVER OF MAN AND NATVRE / HORATIO R. STORER . MD. LLD. FROM HIS FRIEND R. TAIT MCKENZIE. MD. 1913.
56 x 77 mm. Bronze.

ADVERTISING AND OTHER TOKENS

715 AMSTERDAM MEDICAL GARDEN, Entrance Token

Ob. Aesculapius carrying the serpent entwined staff.
ADEST. MAXIMUS . AEGRIS . AUXILIATOR.

Rev. Shield surmounted by crown supported by two cornucopias on a spade with entwined serpent. Below, the name of the possessor, Jacob Hoogereen 1758. About the periphery HORTI MED. AMSTEL. LIBER. INGRESSUS.
50 mm. Brass.

659 APOTHECARY'S plate for card (Venice)

Ob. Animals pictured. ALLA SPEC. DEL STRUZZOD. ORO / THERIACA FINA IN VENEZIA / Soprs il Ponte De Baretteri (in reverse)
84 x 72 mm. Copper.

614 BURCHELL, Basil. London, Eng.

Ob. BASIL BURCHELL / SOLE / PROPRIETOR / OF THE FAMOUS / SUGAR-PLUMBS / FOR WORMS / No. 79 / LONG-ACRE.

Rev. BASIL BURCHELL / SOLE / PROPRIETOR / OF THE / ANODYNE / NECKLACE / FOR / CHILDREN /. CUTTING TEETH.
28 mm. Copper.
Storer catalogue (1931) No. 7641

711 EADY, Dr.
Ob. HEALTH RESTORED A phoenix rising from the flames.
Rev. In tied laurels D^r. EADY / 38 DEAN / STREET / SOHO
19 mm. Copper.

737 GOLDEN ANGEL TOUCH PIECE of Henry VIII
Ob. St. Michael standing with both feet on the dragon. HENRIC . 8 D. Gra. Fra. Z. Hib. Rex.
Rev. Ship with a cross dividing H and a rose, over Royal Arms. PER CRUCE TUA SALVA NOS XPE REDE
29 mm. Mint mark LYS (1543)

712 MALESCI, Ferro
Ob. In circle coat of arms on shield of which are the words LABOR ET INGENIUM. C.C.M. On ribbon below, MARCA DEPOSITA About the periphery FERRO MALESCI 2500. CERTIFICATI MEDICI 2500. / 12% FERRO CHIMICAMENTE PURO
Rev. FERRO MALESCI / INDICATO / DAI SIGNORI / MEDICI IL MIGLIORE / RICOSTITUENTE / DEPURATIVO DEL SANGUE / SI VENDE IN TUTTE / LE FARMACIE / DUE MILA CINQUECENTO / ATTESTI / MEDICI
An advertising token of an Italian patent medicine of unknown date.
33 mm. White metal.

607 MYDDLETON, Dr. Starkey (1688-) London, Eng.
Ob. Armorial shield. Below, SPES IN DEO
Rev. STARKEY: MYDDLETON: MAN : MIDWIFE : LONDON. On pedestal two naked children hand in hand. Ex. between rosettes. 1724
38 mm. Brass.
Storer catalogue (1931) No. 2579

739 (PHARMACIST) ANTIGUA BOTICA FRANCESA, Lima, Peru
Ob. Palm tree encircled by a serpent. Ex. E. D.
Rev. ANTIGUA BOTICA FRANCESA / *LIMA* In beaded circle, UN / REAL
23 mm. Copper.

697 (Pharmaceutical) Societe de Pharmacologie, Paris.
Ob. HYGIA—SALUS Head of Hygeia to left with diadem in center of which an eye, with at sides a poppy capsule. Behind, a poppy bud and flower. In front, serpent and paterna. Ex. BARRE F.
Rev. SOCIETAS PHARMACEUTICA PARISIENSIS A serpent encircling a pillar and dragging a cock from its top. At left a chemical furnace, and at right, a two handled vase with aloe plant in bloom.
31 mm. Silver. Octagonal.
Storer catalogue (1931) No. 6725.

717 (PHARMACIST) BOWEN, I. W., Corunna, Ind.
Ob. IRA W. BOWEN, / DEALER / IN / DRUGS / *MEDICINES* / GROCERIES / & / HARDWARE / CORUNNA, IND.
Rev. DRUGS—AND MEDICINES Large mortar and pestle. Ex. 1863.
19 mm. Copper.
Storer catalogue (1931) No. 7604.

710 SPOLASCO, Baron ( ) Swansea, Eng.
Ob. THE BARON SPOLASCO M:D:&C / THE REAL FRIEND / OF THE AFFLICTED. In circle, bust, facing.
Rev. JAN.^{Y} 22^{D} 1938. / THIS / EMINENT / PHYSICIAN'S / 5,000. RECENT / ASTOUNDING CURES / AND HIS NARRATIVE / OF THE KILLARNEY / IMMORTALIZE / HIS NAME / — / SWANSEA S^{TR} WALES
22 mm. Brass. Milled.
Storer catalogue (1931) No. 3411.

606 STUART, Dr. (—) Glasgow, Scotland.
Ob. In circle, a woman seated, half to left with right breast bared and infant in lap. Around her MIDWIFERY AND NURSING Around that —DR. STUART— / 39 MAXWELL STREET GLASGOW
Rev. PRIVATE MEDICAL ESTABLISHMENT. Seated man feeling seated man's pulse. Ex. 1841
23 mm. Copper.

MISCELLANEOUS MEDALS

608 BILLROTH, Dr. Theodor (1829-1894) Austrian Coin.
Ob. THEODOR. BILLROTH. GEB. 1929. 1829 Head to left. Signed, GRIENDAUER
Rev. REPUBLIC. OESTERREIGH Coat of arms. In center, 2 / SCHILLING

726 LOUIS XV
Ob. LUDOVICUS XV. REX CHRISTIANISSMUS / RÖETTIERS FIL. F.
Rev. PRIX / POUR LES CHIRURGIENS / DE LA MARINE DU ROY / FONDE 1768
36 mm. Bronze.

699 NAPOLEONIC MEDAL 1803
Ob. Snake coiled about a retort. Rocks and bushes in background. AU SOULAGEMENT DE L'HUMANITE To left below, BRENET Ex. DENON DIREXIT
Rev. A closed wreath.
38 mm. Copper.

774 PI GAMMA MU 1908
Ob. Naked figure carrying a torch. Below, 1924
Rev. E. B. KRUMBHAAR / UNIV. OF PA. / 1908
This small gold emblem is of the Honorary Society of Social Science, of the University of Pennsylvania. There is a ring at the top and it might be used as a watch charm.

729 VOVI DEO EXERCITUUM
Ob. LUDOCICUS—MAGNUS REX Head to right. Below, E.
Rev. VOVI DEO EXCERCITUUM / Ex. AEDIF. REG. 1707 Nothing seems to be known about this medal.
30 mm. Aluminum.

(COLLECTION OF BADGES FROM THE COLLEGE OF PHYSICIANS, PHILADELPHIA)

824 AMERICAN ASSOCIATION for the ADVANCEMENT of SCIENCE.
Ob. AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE Ex. PHILADELPHIA 1914 Building in center.
Rev. In center, BASTIAN BROS. CO., ROCHESTER, N.Y.
33 mm. Nickel. Hung from pin on white satin ribbon on which, 35. The plate above reads, Dr. W. W. Keen.

801 AMERICAN COLLEGE OF PHYSICIANS 1915
Gilt pin with dark green ribbon attached. On pin, INDEPENDENCE HALL with building pictured. Below, APRIL—1935 / PHILADELPHIA Green cross, in center book and lamp of knowledge. AMERICAN COLLEGE OF PHYSICIANS 1915 On card, E. B. KRUMBHAAR (typewritten)

803 AMERICAN LEGION 1926
In two parts. The top the Liberty Bell. Above, OFFICIAL SOUVENIR To right and below on shield 1776. To left below on shield, 1926 AMERICAN—LEGION On Liberty Bell, PASS & STOW / PHILADA / MDCCLIII
Badge attached to above, in shape of shield. On ribbon above, PHILADELPHIA. EIGHTH NATIONAL CONVENTION In center a star in a circle. Around circle AMERICAN / LEGION In center of star US
Bronze.

809 AMERICAN MEDICAL ASSOCIATION, St. Louis, 1886
A M A (monogram) engraved. Bar pin 1886 / rosette ST. LOUIS rosette
24 mm. Silver. Red ribbon.

822 AMERICAN MEDICAL ASSOCIATION, Chicago, 1887
A M A (monogram) Bar pin 1887 / between stars CHICAGO
27 mm. Gilt. Blue ribbon with TREASURER.

811 AMERICAN MEDICAL ASSOCIATION, Nashville, Tenn. 1890
A.M.A. / NASHVILLE, / TENN. / 1890
29 mm. Brass

871 AMERICAN MEDICAL ASSOCIATION, New Orleans, 1903
Alligator in crescent form. An orange below. This is a stickpin. Below, N.O. A.M.A. LA.

812 AMERICAN MEDICAL ASSOCIATION, Atlantic City, 1904
897 Blue and white enamel shield in center on white ground. Gold rim, AMERICAN MEDICAL ASSOCIATION ATLANTIC CITY JUNE 7. 10 .04
19 mm. Button on pin.

872 AMERICAN MEDICAL ASSOCIATION, Portland, Ore. 1905
Ob. AMERICAN—MEDICAL—ASSOCIATION Upon quadrangular cartouche surmounted by a beaver and with scrolls at side, a snow covered mountain Ex. 1905 / PORTLAND, ORE.
Rev. A. R. C. FELDECHEIMER / MAKERS / PORTLAND ORE.
23 x 26 mm. Brass with red, green, white and blue enamel.

898 AMERICAN MEDICAL ASSOCIATION, Boston 1906.
820 AMERICAN MEDICAL ASSOCIATION / BOSTON 1906 / Hygeia seated to left with right hand extending patera entwined by serpent.
22 mm. Gilt. A stickpin.

813 AMERICAN MEDICAL ASSOCIATION, Atlantic City, 1907.
899 AMERICAN MEDICAL ASSOCIATION ATLANTIC CITY, JUNE 1907
In center a light house, ocean and a ship in gold, green, white and blue enamel.
19 mm. enamel pin.

873 AMERICAN MEDICAL ASSOCIATION, Chicago, 1908
Female bust. Band on which, CHICAGO 1908 At sides above, A M A ground of blue enamel, raised portions and letters of gold.

874 AMERICAN MEDICAL ASSOCIATION, Atlantic City, 1909.
Seashell of brass on which is a circle with blue enamel rim on which, A M A In center red cross on white ground. Above, ATLANTIC CITY / 1909
Brass and enamel.

814 AMERICAN MEDICAL ASSOCIATION, St. Louis, 1910
900 Rim, dark blue. Over all a red cross. At top, A.M.A. Armored rider and horse in center. Below, JUNE SAINT / LOUIS 1910
24 mm. Red, white and blue enamel with gilt trim.

875 AMERICAN MEDICAL ASSOCIATION, Los Angeles, 1911.
AMERICAN MEDICAL ASSN. / LOS ANGELES 1911 In center, coat of arms.
25 mm. Nickel.

876 AMERICAN MEDICAL ASSOCIATION, Atlantic City, 1912
19 caduceus 12 Below two plates, one with coat of arms, the other a lighthouse. Ex. A M A / ATLANTIC CITY
29 mm. Bronze.

877 AMERICAN MEDICAL ASSOCIATION, Minneapolis, Minn., 1913
AMERICAN MEDICAL ASSOCIATION / MINNEAPOLIS 1913 Shield in center.
24 mm. Octagonal brass.

878 AMERICAN MEDICAL ASSOCIATION, Atlantic City, 1914
ATLANTIC CITY, 1914 on bar above. AMERICAN MEDICAL ASSOCIATION On rim, A M A Staff of Aesculapius on red background.
19 mm. Bronze, gilt and enamel.

879 AMERICAN MEDICAL ASSOCIATION, Detroit, 1916
AMERICAN MEDICAL ASSOCIATION Below, seal with A M A around rim and staff of Aesculapius on a red ground. Below a manned galley. Ex. DETROIT 1916.
24 mm. Bronze (irregular)

880 AMERICAN MEDICAL ASSOCIATION, New York, 1917.
On circular white enamel field the arms of New York surmounted by spread eagle with 1864 below. On each side in red, the staff of Aesculapius. AMERICAN / MEDICAL ASSOCIATION / NEW YORK 1917

901 AMERICAN MEDICAL ASSOCIATION, Chicago, 1918
815 A M A Eagle with wings outspread above two shields. Below insignia of the U. S. Army Medical Corps. On ribbon, CHICAGO—1918
22 mm. Bronze.

816 AMERICAN MEDICAL ASSOCIATION, Atlantic City, 1919
869 Seashell on which is the caduceus, badge of the Medical Corps of the
902 United States Army. Below, ATLANTIC CITY / AMERICAN MEDICAL ASSOCIATION
22 x 28 mm. Bronze.

881 AMERICAN MEDICAL ASSOCIATION, New Orleans, 1920
Circle, above with A M A and staff of Aesculapius in center. To left, 19. To right, 20 Below, steamboat. To left NEW ORLEANS Below, AMERICAN / MEDICAL ASSOCIATION
22 x 27 Silvered metal.

882 AMERICAN MEDICAL ASSOCIATION, Boston, 1921.
Ancient ship with small boat along side. Five figures on shore in background. A M A / AMERICAN MEDICAL ASSOCIATION / BOSTON 1921

817 AMERICAN MEDICAL ASSOCIATION, St. Louis 1922.
883 AMERICAN MEDICAL ASSOCIATION. St. Louis—1922
Head facing. Ex. Dr. Wm. BEAUMONT
25 mm. Bronze. One copy a celluloid button.

884 AMERICAN MEDICAL ASSOCIATION, San Francisco, 1923
SAN FRANCISCO. 1923 / AMERICAN MEDICAL ASSOCIATION In center the caduceus. In background, the sea, a ship and cliffs. Above the oval, a bear and below bunches of grapes.
14 x 24 mm. Bronze.

818 AMERICAN MEDICAL ASSOCIATION, Chicago 1924
885 AMERICAN MEDICAL ASSN. City and lake. Hygeia to right holding aloft the caduceus in right hand while left hand rests on a shield. CHICAGO, 1924. Building below.
23 x 29 Gilt bronze.

819 AMERICAN MEDICAL ASSOCIATION, Atlantic City, 1925
886 Above, lighthouse. Below, a pier. In center ATLANTIC CITY 1925 Below, AMERICAN MEDICAL ASSN.

887 AMERICAN MEDICAL ASSOCIATION, Dallas, 1926
Above between two roses, a star. In circle below, A.M.A. Staff of Aesculapius. To left, 19. To right, 26. Ex. DALLAS
23 mm. Bronze.

888 AMERICAN MEDICAL ASSOCIATION, Washington, D.C. 1927
Capitol dome. Below a wreath in which A.M.A. / 19 staff of Aesculapius 27 / WASHINGTON, D.C.
22 mm. Bronze.

889 AMERICAN MEDICAL ASSOCIATION, Minneapolis, 1926
AMERICAN MEDICAL ASSN Below, staff of Aesculapius. To right and left two beavers between which is a dam. Ex. MINNEAPOLIS, MINN. / 1926
27 x 30 Gilt.

890 AMERICAN MEDICAL ASSOCIATION, Detroit 1930
A M A / DETROIT / 1930 Bridge, river below. In foreground to right, staff of Aesculapius.
27 mm. Bronze.

800 AMERICAN MEDICAL ASSOCIATION, Philadelphia 1931
PHILADELPHIA 19—31 Building and trees in relief. Ex. AMERICAN MEDICAL / ASSOCIATION Bar pin with circle behind which are laurel and oak branches. Around circle, A M A In center, staff of Aesculapius. Green ribbon with SCIENTIFIC EXHIBIT Card E. B. KRUMBHAAR
23 x 30 Gilt.

891 AMERICAN MEDICAL ASSOCIATION, Milwaukee, 1933
A M A. 1933 / MILWAUKEE Street through a city.
22 x 32 mm. Bronze.

892 AMERICAN MEDICAL ASSOCIATION, Cleveland, Ohio, 1934
1934 / CLEVELAND Perpendicularly A M A to left.
21 x 21 irregular. Bronze.

850 AMERICAN MEDICAL ASSOCIATION, Atlantic City, 1935
903 Seashell. At top ATLANTIC CITY Below, C/ A M A / A / 19-35
904 21 x 21 mm. Gilt.

893 AMERICAN MEDICAL ASSOCIATION, Atlantic City, 1937
A M A to left. Light house with rays of light to right. Three sail boats. Ex. ATLANTIC CITY / 1937
21 x 33 mm. Bronze.

894 AMERICAN MEDICAL ASSOCIATION, Chicago 1940
Ob. A M A Staff of Aesculapius to right. Below bust of Statue of Liberty. To right, 1940 Ex. NEW YORK
Rev. GREENDUCK Co. / CHICAGO
34 x 26 irregular. Gilt.

895 AMERICAN MEDICAL ASSOCIATION, Cleveland, 1941
A M A / CLEVELAND / MOSES CLEAVELAND / city / 1941 To right, staff of Aesculapius. Full length figure of Moses Cleaveland facing.
28 x 28 Gilt.

896 AMERICAN MEDICAL ASSOCIATION, Atlantic City 1942
ATLANTIC / CITY / 1942 City and ocean A M A / Staff of Aesculapius.
23 x 29 Gilt.

823 AMERICAN MEDICAL ASSOCIATION, *OFFICER'S BUTTON* 1914
868 White enamel center with cross in red surrounded by a dark blue band with A M A M
12 mm. Lapel button.

821 AMERICAN MEDICAL ASSOCIATION GUEST BADGE Boston, 1921
AMERICAN MEDICAL ASSOCIATION / BOSTON 1921. Hygeia seated to left, with right hand extending patera entwined by serpent. Red satin ribbon and pin attached. On ribbon, GUEST / A.M.A.
25 mm. Gilt.

828 AMERICAN PHYSICIANS AND SURGEONS, Congress of—Atlantic City 1919
Blue and gold enamel pin CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS. ATLANTIC CITY. 1919. In center, white enamel sea with sea shell, lighthouse and boat pictured. 22 mm.

860 AMERICAN PSYCHIATRIC ASSOCIATION BUTTON
Portrait bust of Benjamin Rush to right. AMERICAN PSYCHIATRIC ASSOCIATION. BENJAMIN RUSH.
15 mm. White metal.

848 BADGE OF RANK
Silver ivy leaves (2) worn by Lieut. Col. William J. Taylor, M.C., U.S.A. World War April 6, 1917
25 x 28 mm. Silver.

835 CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA, Chicago, 1917
Red enamel membership button in form of Maltese Cross 1917 / C S C
12 x 12 mm.

846 COLLEGE OF PHYSICIANS
A wide blue satin badge with brass pin and gilt fringe. On ribbon the seal of the College, COLL. MED. PHILAD. INSTIT. A. D. MDCCLXXXVII. In center a pedestal with lamp of knowledge. Below, NON SIBI SED TOTI

829 CONNECTICUT MEDICAL SOCIETY 1810-1884
Ob. MEDICAL DEPARTMENT OF YALE UNIVERSITY 1813-1913 Bust facing.
Rev. SIGILL: COLL: YALEN: NOV: PORT: NOV: ANGL—.—In field, shield with open book. Above, ET To left, LUX To right, VERITAS Below, BASTIAN BROS. CO., ROCHESTER, N.Y. Attached to bar pin with dark blue ribbon. On bar, MEDICAL INSTITUTION OF YALE COLLEGE / CONNECTICUT MEDICAL SOCIETY / 1810-1884
35 mm. Bronze.

858 HARVARD TERCENTENARY, badge of Marshal
Ob. ANNO ACADEMIAE HARVARDIANAE TRECENTESIMO MDCCCCXXXVI In center between palm and bay leaves open books on which are, VE RI / TAS
Rev. 1636-1936 / OUT OF SMALLE / BEGINNINGS GREAT / ER THINGS HAVE / BEEN PRODUSED BY HIS / HAND THAT MADE ALL / THINGS OF NOTHING / AND GIVES BEING / TO ALL THINGS / THAT ARE
A 28 mm. reduction of the medal #734. White metal. Hung on a red ribbon.

808 HISTORY OF MEDICINE, III International Congress, London 1922.
.III. INT. CONG. HIST. MED. / LONDON 1922. A stickpin badge showing the Centaur Chiron carrying baskets on his shoulders. Below, XEIPWV
20 x 26 mm. oval. White metal.

831 HYGIENE, XIV International Congress, Berlin 1907
Hygeia facing with Aesculapian staff. At right perpendicularly, HYGIEIA To left, XIV / INT. CONGR. / F. HYG. U. / DEMOGR. / BERLIN / 1907
30 mm. diamond shaped pin with red, white and blue ribbon attached.

834 MEDICINE, Ninth International Congress, Washington, D.C., 1887.
Ob. CHRISTOPHER COLUMBUS Bust to left.
Rev. Washington, D.C. Capitol building. Below, crossed branches. Hung from a bar on which, NINTH / INTERNATIONAL MEDICAL CONGRESS / 1887
35 mm. Aluminum. Red ribbon attached.

840 MEDICINE, XII International Congress, Moscow, 1897.
Beneath serpent and chalice a shield resting on a branch of laurel at left. Upon it, XII / CIM / MOSCOU / 1897
A very thin metal pin.

837 MEDICINE, XIII International Congress, Paris 1900
Ob. Hygeia, laureated and seated to right sheltering with her veil an antique lamp on a column. Ex. LANGVENTEM / SVSCITAT. IGNEM Signed F. Vernon
Rev. XIII / CONGRES / INTERNATIONAL / DE MEDECINE The city of Paris with view of Notre Dame. Ex. Shield of the city upon a branch of laurel, and mirror entwined by serpent. Ex. PARIS / 2—9 / AOUT / 1900 22 x 40 mm. Irregularly rectangular. Silver.

825 MEDICAL AND CHIRURGICAL FACULTY—Dedication exercises 1909.
Ob. Aesculapius seated on throne, reading with staff in right hand. At his feet are books, PATHOL. / ANAT. / CHEM. / SCIENTIA / HIST. NAT.
Rev. Building with tied laurels below. To left, 1799. To right 1090. Below, DEDICATION EXERCISES / MAY 13TH 1909 / MEDICAL AND CHIRVRGICAL / FACVLTY / OF MARYLAND
38 mm. Bronze.

805 MEDICAL HISTORY, IX International Congress 1932
Ob. Pointed oval blue enamel pin with white rim. Snake coiled about a retort 1932—32 Below, .IX. CONGRESS / INTERNATIONAL / I.ST. MRD. / BUCURESTI star
Rev. CERBU

804 MEDICAL HISTORY, XTH International Congress, Madrid 1935.
Ob. White center with gold letters, SEPT^ber / 23—29 / 1935 On red band surrounding, VRSARIA emblem MANTVA emblem MADRID In blue band surrounding the red one, emblem, CONGRASO INTERNATIONAL D HISTORIADIA MEDICINA 29 mm. Red, white and blue enamel button.

844 MEDICAL SOCIETY OF NEW JERSEY, Atlantic City 1900
Celluloid button with arms of New Jersey pictured. Below, on ribbon, LIBERTY AND PROSPERITY / WHITEHEAD & HAOG CO., NEWARK, N.J.
Attached to white and blue ribbon on which, MEMBER / MEDICAL SOC'Y / OF / NEW JERSEY . . . . ATLANTIC CITY / 1900

802 MEDICAL SOCIETY, State of Pennsylvania 1925. 75th annual session.
White celluloid button with pin attached ANNUAL / 75TH / SESSION (in gold) White satin ribbon attached MEDICAL / SOCIETY / OF THE STATE / OF PENNSYLVANIA / — / HARRISBURG / OCTOBER 5-8 / 1925
31 mm. White celluloid.

826 NEUROLOGICAL, Second International Congress, London 1935.
Ob. J. HUGHLINGS—JACKSON Bust facing to left. Below, 1835-1935
Rev. SECOND / INTERNATIONAL / NEUROLOGICAL / CONGRESS / LONDON / 1935
37 mm. Silver. Attached to 22mm. bar pin.

842 OREGON PHARMACEUTICAL ASSOCIATION 1893
White satin ribbon badge. Eagle perched on a mortar. Below, O.S.P.A. ***3d Annual Meeting / OF THE / OREGON STATE / PHARMACEUTICAL ASSO'N / PORTLAND, OR. / JUNE 13TH AND 14TH 1893. / A.O.U.W. HALL, / COR. SECOND AND TAYLOR STREETS.

839 OTOLOGY, Ninth International Congress, Boston 1912.
Ob. Over seal of Harvard University a scroll upheld by stalks of maize, upon which NINTH / INTERNATIONAL / OTOLOGICAL CONGRESS / MEDICAL DEPARTMENT OF / HARVARD UNIVERSITY / 1912 / BOSTON Below, Aesculapius seated, facing to left, with left foot on stool and empty staff in right hand. At right, a flaming altar entwined by serpent.
Rev. Between upright maise stalks, tied, 1876 / NEW YORK / 1880 / MILAN / 1884 / BALE / 1888 / BRUSSELS / 1885 FLORENCE / 1899 / LONDON / 1904 / BORDEAUX / 1909 / BUDA PEST
33 x 60 mm. Bronze. On red and white ribbon.

849 PHYSIOLOGY, XV International Congress, Moscow 1935
Ob. XV in gold raised letters. Building in high relief in gold. Below, 1094. On building in red letters, CCCP
21 x 35 mm. Blue enamel on metal.

847 ROYAL ARMY MEDICAL CORP (Great Britain)
Badge as it was worn on the field service uniform (1914). Taken from the collar of Major James Galloway's tunic. Tied laurels within which

is a staff about which a serpent is entwined. Above, a crown. Below on ribbon, ROYAL ARMY MEDICAL CORP.
Bronze.

845 SURGEONS, Third International Congress of Surgeons, Brussels, 1911.
A stickpin in red and green enamel with gold. 3RD CONGRESS / BRUXELLES / 1911

833 SURGICAL SOCIETY, VI International Congress, London 1923.
Ob. Robed figure seated with arms upraised. Pinned to a red, white and blue ribbon.
35 mm. Bronze.

857 SURGICAL SOCIETY, VIII International Congress, Warsaw 1929.
Ob. Armored mermaid. City in background. VIII CONGRES / DE LA SOCIETE INTERNATIONALE / DE CHIRURGIE / VARSOVIE—25-25. VII-1929
20 x 30 mm. Silver plated.

841 SURGERY, International Congress, New York City 1914.
Membership badge. A button of white metal with a white enamel square containing a red cross with the letters S I C Below, a typewritten card, KEEN On ribbon below, NEW YORK 1914.

806 SERVICE BUTTON
White button with red edge. In the white field three blue stars. Worn by C. H. Krumbhaar 1917-1919, a father of two sons and one daughter in active service in the World War.
22 mm. Celluloid.

838 TUBERCULOSIS, British Congress 1901.
Badge on stickpin. Oval surmounted by a crown and a crowned lion. BRITISH CONGRESS ON TUBERCULOSIS. 1901. In center picture in enamel, sun sending its rays through a window. Mountains in distance.
25 x 32 mm.

832 TUBERCULOSIS, International Congress, Paris 1905. Badge of the United States Delegate.
Ob. Ill figure reclining in a chair.
Rev. City pictured / CONGRES / INTERNAL / DE LA / TUBERCULOSE / PARIS 2-7 OCT / 1905
Bell-shaped lead. Attached to a white ribbon with red patriarchal cross stamped thereon.

830 TUBERCULOSIS, International Congress, Washington 1908.
Ob. Female, hald facing, arising from sea with arms uplifted to the sun. In left hand an hour glass. Behind her a dragon. At left, LVMEN Signed, V. BRENNER
Rev. In tied laurel wreath, an eagle to left, perched on oak bough before stars and stripes. Below, INTERNATIONAL / CONGRESS / ON / TVBERCVLOSIS / 1908 / patriarchal cross.
31 x 36 Gilt bronze, attached to red, white and blue ribbon.

843 TUBERCULOSIS, National League against Tuberculosis.
Ob. On rim, LEGA NAZIONALE CONTRO LA TVBERCOLOSI A patera on stand. To left, a naked child with bow and arrow aiming at a serpent. Below, YTEIA Ex. . . .
Rev. 1° CONGRESSO CONTRO LA TUBERCOLOSI In circle, NAPOLI / MDCCCC
29 mm. German silver button.

836 TUBERCULOSIS, Society for the Prevention of Tuberculosis An oval with patriarchal cross in center. FRESH AIR LEAGUE. PREVENTION OF TUBERCULOSIS.

14 x 19 mm. oval. Bronze. Adopted October 1908.

862 UNIVERSITY OF PENNSYLVANIA

Ob. University . OF / PENNSYLVANIA Shield of the University. In chief, gules, dolphin and books: in ground, a chevron with three plates. The books represent learning, the dolphin is taken from Benjamin Franklin's Arms and the chevron and plates from those of William Penn. Beneath on a ribbon, the motto LEGES—VANAE / SINE MORIBUS On either side of the shield 1740-1940

Rev. A herm crowned by two heads back to back, divided by laurel. Facing left, Benjamin Franklin as an old man crowned with bays, to represent the past; facing right a youth looking to the new light for guidance in the future. In the ground TEMP- / ORIS LUX—ILLUSTRET / ACTI— POSTERITATIS / VIAM Below to left, the lighted lamp of learning. Above to right, an electric bulb with zig-zag rays. At the base C in circle and RTM (monogram) 1938. On edge, BRONZE

29 mm. reduction of the bicentennial medal. Each of these seven medals are hung on different colors of ribbon; Copper for Social Science; Green for Medicine; White for Humanities; Yellow for Natural Sciences; Brown for Fine Arts; Scarlet for Religion and Red, white and blue used by Delegates of other institutions.

807 WELFARE FEDERATION BUTTON worn by workers in the annual campaign. SUPPOSE / NOBODY / CARED / ?

21 mm. White celluloid.

Records off the Record*

By FRANK PLACE

AS YEARS go by one senses the value of the temporal, of side-issues, of the things we see every day and take for granted, things we dismiss as so commonplace as to be valueless. As we go through old volumes and old records we sense the value of seemingly trivial and unimportant facts in the reconstruction of the past.

These jottings are a collection of some of the things of this sort that have occurred to me. The object of them is to make you more conscious of trifles and perhaps call to mind many that I have omitted.

All librarians must be historically minded, and yet it is in the history of their own institutions that librarians as well as others neglect to keep accurate records of past events. It is easy to make notes of history of far-away things, people and places and to forget that one's own institution, small and insignificant though it is now, will be running long after the present incumbents are forgotten, and that others may be interested in the early days—that is to say, in what you are doing now. For instance, if you want the annual report of the Blank Hospital for 1925, you write to ask for it. Do you get it? What a question! "Those reports were all distributed at the time and none are left" is the common reply. Who receives the publications of your own officers and committees? Does the library get them? Do you have a reserve, for those who will really want them, above and beyond those on the current mailing list? Well, hardly ever. You hear about them by accident, go after them in person, and tear them from their promulgators by main strength.

My first point, then, is to have an HBI, Home Bureau of Investigation, to keep tabs on all publications of your own institution, continually prod its various departments for material, keep your list fresh and up-to-date of whom and what, to the end that you will at least have one complete file of your own publications, and, if the gods are indulgent, perhaps a few reserves.

Right here, too it may be your unofficial duty to see that those responsible for these publications shall have some idea of continuity; that is, to see that series numbers and dates appear where needed, to keep

* Read at a regional meeting of Medical Librarians at Philadelphia, June 11, 1943.

some record of numbers already issued to keep pagination continuous, et cetera. How many times have you been driven to desperation by such lapses? Were your seven numbers of the *Journal of Home Dosing* all that were issued? And was no. 1 of volume three the next issue, even if it appeared two years later?

This will bring to mind the change-of-title craze that hits every new regime, not always in governmental circles. The reorganization that changes a bureau to a committee will just as easily change the *Bulletin* to *Official Journal* without winking an eyelash. But I do not wish to harrow your souls too much, and will only call to mind another sign of official rejuvenation, the change of size in the middle of the volume.

About the most important record and the one most frequently omitted is the date. Not only should every periodical publication be dated but every other one of whatever sort. Date the notes to your staff, date donations, and if I am not too heretical, date your letters. A dating stamp helps mightily where much is handled, and makes more intelligible those white elephants the loose leaf systems. You will be surprised to find how many times the date of an otherwise insignificant item will help in the solution of a problem. The date on newly inserted guide cards may be of use in the future in establishing the length of life of these in the catalogue. The date of accession is often the only clue as to the date of a pamphlet or book otherwise undated.

When you move into your new building—yes when you move into your new building, some one may say: "What became of that cabinet we used to have in the east room?" "What cabinet?" another might ask. "Why, the one that shows in this photograph. Oh, yes, and it shows the picture of Dr. Blue that Dr. White gave us." A photograph of an old building will show many historical facts and reconstruct the past as no other record will, especially a view of an interior where changes are more likely to occur. And don't forget to get records of the arrangement in the new building because when the new wing is added, you will be glad to have the "old" arrangement on paper.

Speaking of pictures it is not a bad idea to have photographs of the library staff at different periods. And don't forget to name everybody, and, yes, date the print and the negative. Why not assemble photographs of the members of your society or academy? Some one of you no doubt owns a "candid" camera and can take snapshots with little or no trouble.

Let me relate how a side-show moved into the "big top" at the New York Academy of Medicine Library. Away back in 1908 I discovered a small batch of portraits of former members of the Academy, steel engravings that nobody seemed to know anything about. It occurred to me that a file of portraits with an index of them in our catalogue was indicated. Why not add to the index such portraits as we

came across in books and periodicals, was the next thought? Accordingly that program was followed, incidental to our regular cataloguing, making the entries on red-top cards to show the special file. From then on our index grew slowly till our expansion in 1925. Our vertical file of portraits was, however increased by the gift of over a hundred engravings and mezzo tints from Dr. C. L. Dana which gave our collection standing of the first class, increased later by the rest of his collection and by the bequest of Dr. J. A. Fordyce. Now we have a file of eight thousand portraits mounted or framed, and in our index perhaps 100,000 entries of about 50,000 individuals. The frequent use of these is quite surprising. Mr. Richard G. Wagner of our staff has told in the *Library Journal* (1941, 66:250-251) of the use of the index, bio- and bibliographically.

Pictures of medical and surgical subjects have only recently begun to be collected and indexed, though tentatively. "I want a picture of a surgeon using a lancet" may perhaps be quickly answered, but the request for a picture of a doctor on horseback with saddle-bags *in situ*, may not be so easy; and so too with a variety of subjects medical.

Encourage staff members to keep a record of library happenings—such a diary often gives evidence where official records fail.

One method of doing this is in a standardized method of issuing and recording "day's orders." Changes in procedure, methods of cataloguing, rules for this and that are issued from time to time. If these are uniform, suitable for binding or keeping in a cover, every member of the staff can keep them in proper form for future reference. Needless to say, see that each is dated, and in full, May 1, 1943, not simply "Wednesday.". . . Even if you are the sole and only worker concerned it is well to have such statements preserved for your own infallible memory. If you have a "house-organ" these occasional mandates may appear in it with indexing to pull them together.

In the matter of supplies and personnel a location and inventory guide helps to keep these in mind and in up-to-date form.

Your catalogue shows the class to which each book belongs but does it show where the class is located in the building? A directory and a map of the collection both public and private is a great help to one unfamiliar with the lay-out. In our own library we have many separate entities the location of which the new assistant has to discover; such as: periodicals, several special book collections, portraits, museum, photostat, duplicate books, duplicate periodicals, documents, bound pamphlets, unbound pamphlets in three categories—these take time to locate even with the aids mentioned.

In these few notes I trust I have made my point—the importance of keeping written and graphic records of some of the minor lines of our work.

Further Notes on the Instruction of Medical School Students in Medical Bibliography

By WILLIAM DOSITE POSTELL

WE HAVE come a long way since Mr. Frankenberger[1] issued his first appeal for the introduction of courses in our medical schools for the instruction of students in medical bibliography, but we still have a long way to go before such instruction is required in every school and taught in a manner similar to the other disciplines.

From a perusal of the literature it does not appear as if medical bibliography has as yet been recognized as a discipline having all the attributes of the generally recognized sciences, and as a result although a recent survey shows that 50 of the 64 medical schools are now giving some kind of instruction in medical bibliography the instruction as a whole in the majority of schools is still being conducted in an informal manner; the librarian or in some cases one of the members of the faculty spends an hour with a small group of first year students giving a formal or informal discussion on the use of the library.[2]

We have felt that this type of instruction would as a rule fail to make the student realize and appreciate just how important a knowledge of the literature of his subject is to him. Accordingly, in our school we have insisted that a knowledge of medical literature is a discipline in itself, and a course covering this field should be conducted similar to courses in the other sciences.

With the fullest sympathy and co-operation from the Dean of our school, and the members of the curriculum committee we have been able to organize our course in accordance with all the principles of academic instruction. The actual organization of the course has been the result of our experience over several years. New material as well as new methods were introduced every year and the results obtained carefully observed. Students picked at random were interviewed at the end of each year for criticisms, and their attitude and expressions were carefully noted for the future presentation of this work. Gradually as our material was sifted through we began to have somewhat of an understanding of just what material to present, and also in what manner it could best be presented.

We have come to feel that if we wished to instill a proper understanding and appreciation for our medical literature of today in our students with a clear understanding of just how important it is for them to become acquainted with the literature of their subject and its various possibilities, that it is necessary to give them more than just a mere trade acquaintance with the library and its various tools. With this concept of library instruction we felt it was first necessary to develop the students' background to a point where he would have some appreciation of the beginnings and development of our present medical literature in order for him to better realize the enormous possibilities of this rapidly expanding literature which is our heritage of today. In other words our concept of instruction was to be based on the "Natural History of Books."

To do this properly we have found that this course can be best presented by a series of lectures followed with what may be called laboratory instruction. The lectures are four in number, which are given to the entire class. These lecture periods are followed by the laboratory periods, which are also four in number. In the latter periods the class is broken up into four groups and each meet separately at different periods.

Naturally in four lectures only a brief survey can be given of the beginnings and development of medical literature. No attempt is made to go into great detail, but an attempt is made to present the facts more in the form of a story; a story that is very interesting. The theme of the lectures have been organized around four topics; that is, the manuscript, the book, the transaction and the journal. Each one of these topics is presented in as interesting a manner as possible; the salient features in the development of each one is brought out and examples are shown as far as possible illustrating these features.

The instruction in the laboratory periods are also grouped into four topics, e.g. library citizenship including the various card catalogs, reference books, periodicals and their indexes, and the principles of bibliographical citation. As mentioned previously for this instruction the class is divided into four groups with approximately 25 students in each group. The laboratory section is conducted as follows; the class is opened with a period of instruction lasting not over 20 minutes, the discussion is then thrown opened to the students for any questions or information they wished made clear; the individual exercises which each student will be required to complete is explained, and after all questions have been answered the class adjoins to the library to begin work on their exercises. Their work during the remainder of the hour is supervised by members of the library staff, after that they have to complete their exercises on their own time.

The various lectures, including the laboratory work and exercises,

have been compiled in book form and are now being published for the students by the University.[8] It was felt that far more could be accomplished if there was available a text which would serve as a media in presenting this course to the students. This text is the outgrowth of our lectures and exercises and was first mimeographed for use in our classes. At the end of each year it was revised; new material added, irrelevant material discarded and other sections were rewritten as our experience showed how best it could be improved.

In regard to those charged with the responsibility for conducting this course, the librarian was at the very first directed by the Dean to assume this responsibility, which is as it should be. However, other members of the library staff were soon utilized to assist in this instruction. At present our courses are conducted in this manner. The librarian gives the lectures, and other members of the library staff whose ability, training, and experience make them thoroughly capable of assisting in this work are assigned certain laboratory groups to have charge of the instruction. The matter was thoroughly considered before such assignments were made. However, after some consideration it was felt other members of the library staff could be used with advantage for conducting the laboratory classes for these reasons, (1) theoretically speaking with other members of the library staff assisting in this instruction it would seem more of a library project rather than the job of one individual, (2) the members of the library staff would be able to sell the library much more successfully by having this personal contact with the students, and (3) the members of the library staff would themselves greatly benefit by having to teach the students.

To insure that the caliber of instruction would be as efficient as we could possibly make it a series of practice teaching classes were held. Members of the library staff who were selected to assist in the laboratory sections were required to prepare at least two lectures and present them before the members of the library staff. At the conclusion of the class period a discussion followed as to the merits and demerits of this presentation. Criticism was offered with the purpose of attempting to improve the type of instruction that would be presented. By this method we feel we have been very successful in improving our instruction, and as we gain in experience we hope our subject matter and methods of teaching will continue to improve.

This introductory course should by all means be followed by a more thorough course in the literature of the various specialties with instruction and practice in the preparation of scientific papers. The organization for such a course was drawn up and presented to the Chairman of the Curriculum Committee for his consideration. We were gratified to know that it met with his approval, and he was more than willing to set aside certain periods for this instruction in his specialty, but unfortunately

the accelerated program made it necessary for us to cancel our plans until a more opportune time.

Our experience has shown us that the effort utilized in presenting this course will be repaid many fold, in the increased use of the library by the students and in their appreciation of how important a knowledge of the literature can mean to them.

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A Medical Society Library in a Public Library

By MILDRED R. CROWE

THE PROBLEM of providing medical library facilities is often a difficult matter for small or medium sized medical societies to solve. This is especially true when the society is located in a community where there is no medical school. Such societies may be large enough to desire a library but not large enough to assume the responsibility for all the expenses which such a project entails. A logical solution would seem to be a department library in, or connected with, the public library, yet there are comparatively few such libraries. A study of the 1942 edition of the *American Medical Directory* reveals approximately a dozen among the 324 libraries listed. This small percentage presents quite a provocative situation when we consider that, if the smaller medical societies would seek co-operation from their public libraries, there could be a decided increase in the number of medical collections as well as in the amount of professional literature readily available for the local physicians. As the society grows so will its funds until eventually it might be able to maintain its own building; the medical collection would then become, while a branch of the public library, a complete and separate unit in itself. In the meantime, members of the society would have access to medical literature and the advantages of library facilities.

I have recently had the opportunity of helping to establish and maintain such a library, the Medical Section of the Chattanooga Public Library. The credit for establishing this Section is largely due to Miss Adelaide C. Rowell, Librarian of the Chattanooga Public Library; Major Franklin B. Bogart, Chairman of the Medical Society Library Committee; and Mrs. Eileen R. Cunningham, Librarian of the Vanderbilt University Medical Library. A search of the literature at the time when this library was first founded revealed very little published material that might serve as an aid to persons interested in organizing such projects. This fact is my chief reason for presenting my own experience in this field.

Chattanooga, primarily an industrial city, is located in Hamilton County which has a population of 180,478. The Chattanooga Public Library system which serves this population is composed of the Main Library and 51 city and county branches and agencies. The Main Li-

brary contains several special collections—the Government Document Department, the Genealogical Room and a separate division on Tennesseeana. In 1940 this Main Library was moved into impressive new quarters which it occupies jointly with the University of Chattanooga Library. Having grasped the advantages that co-operation with the University Library provided it was an easy matter for the Public Library to realize that further co-operation with the interests of the various professions of the city could mean a great deal to the institution. Therefore, when the newly located public library was opened it contained the embryo of a new and quite different department. This was the Medical Section which was in the process of being established by the Chattanooga and Hamilton County Medical Society and the Librarian and the Board of Directors of the Chattanooga Public Library.

For several years prior to 1940 the Medical Society Library Committee had been striving to obtain a medical library. Due to the fact that the society is a relatively small one composed of 160 members, it was realized that it would be extremely difficult to obtain and support the type of library desired. The interested members were foresighted enough to see that such a project could be obtained only through the co-operation of the Public Library. At the time of the first request, however, the Public Library was located in a building that it had outgrown years before and had no room to house another department. The committee did not relinquish this idea and some time later when the Public Library was preparing to move into its new building another request was made. This time success was achieved and a section on the third floor of the new building was designated for the doctors. This building is ideally located so far as the medical profession is concerned. It is just across the street from the Medical Arts Building where the society meetings are held and is centrally situated for all the hospitals and clinics.

The committee had not confined all its activity to procuring a place for the library but had been busy for some time gathering the nucleus of a fair-sized medical collection. The Society members had been urged to bring their files of current and back journals and these had been stored in the basement of the Medical Arts Building. Many books were also contributed.

After the initial collection had been assembled an informal contract was established in which the Medical Society agreed to be responsible for the purchase of books, journals, subscriptions, and the binding and supplies incidental to these. The Public Library agreed to provide the librarian and to maintain the service of the department.

The actual technical library work began six months before the opening of the medical section. At the very start we were forced to face the fact that the medical library and the public library are two quite different entities. The procedure for establishing one cannot be followed

in organizing the other. When once we had directly acknowledged this fact we were able to proceed accordingly. We decided that the routine of our already well established public library would be followed whenever feasible but otherwise we would adopt new methods suitable for this special collection.

The first difference to be confronted was in the drawing up of definite rules and regulations. The public library as its name implies serves the general public; the medical library serves a special class of that general public. Rules that must be stringent enough to protect an institution for and from all the heterogeneous classes that use it are not the same rules that must be elastic enough to take care of the needs of a special class. Our medical library was to be used mainly by the doctors who would provide its chief source of financial support. Naturally, they should be granted special privileges and the utmost service. Therefore, our next step was to establish a different set of rules and regulations for this new section. To do this we found it best to permit books to circulate only to members of the Medical Society and to persons to whom they grant permission to use their cards. The general public, however, is free to use the room at all times and unlimited reference service is given to the layman as well as to the physician.

Since we learned immediately that a medical collection consists chiefly of periodicals we realized that our public library rule of non-circulation of bound journals could not be followed and that these volumes must be allowed to circulate whenever needed. We also decided that any rule concerning non-circulation of current issues of journals must be made flexible too. In fact we soon admitted that there are times in a medical library when it seems almost impossible to say that any volume is strictly for reference only. Emergencies make all of them part of the circulating stock. Many librarians are adamant on the circulation of reference books because they feel that in circulating a volume to one person many other people are deprived of the use of it. That is a problem which would have to be handled quite differently in a large medical library or in one used mostly by medical students. In our case, however, since our number of borrowers is small we do not have this difficulty. We can reach the doctors or their secretaries readily and messenger service is prompt and efficient. Each doctor realizes that when he has finished with a volume it should be immediately available if any other doctor wants it. Of course, there are occasions when we wish that we could buy all volumes in duplicate. However, the good will that we gain and the help that we feel we give to these extremely busy people who at times simply cannot come to the library seem to outweigh all other minor difficulties.

The next noticeable difference arose in the cataloging department. The Public Library uses the Dewey Decimal System of Classification.

After much deliberation we came to the conclusion that this would be cumbersome for a medical library. The medical systems were then studied and the Cunningham classification was adopted.[1] This system, which provides for almost indefinite expansion, seems to us to be ideal for a medical collection.

Of course, each library, public or special, must decide many issues for itself and its own particular needs. One of these issues which always arises is whether to use a detailed or a simplified method of cataloging journals. Because it was quite obvious that in a medical library journals would outnumber books by a large percentage we decided that classifying them was not only impractical but futile. Consequently, our journals are shelved not by classification numbers but simply alphabetically by title. We also concluded that cataloging of journals could be extremely simplified since medical journals are adequately indexed under author and subject in the *Quarterly Cumulative Index Medicus*. These two changes from our public library system have been of immeasurable help. Work has been greatly speeded and journals have been made available almost immediately instead of having to be held for classification, detailed cataloging and shelf marking. By adopting a simplified process a large stock of newly bound journals will be out of circulation only about a day at the most instead of the several weeks that the more detailed process frequently demands.

Book selection, we found, also requires a different procedure in a medical library since there is no special service that supplies up-to-the-minute book evaluation as is provided for public libraries. Our basic book stock was selected entirely by the Medical Society Library Committee. Later a book committee composed of one member of each of the main specialties was delegated to assume this responsibility. Since the general exodus of physicians following the fatal December 7 at Pearl Harbor, however, all books are selected by the librarian from the requests received and from current book reviews. These are subject to approval by the Library Committee Chairman. The preferable arrangement, however, would be to have the entire committee meet with the librarian to decide on new additions. We hope to achieve this happy solution after the war when once again maybe it will be possible to assemble a certain number of specified doctors in one place and at one time.

One of the points where we have found the greatest difference between public and medical libraries is in publicity. The public library makes publicity its greatest ally. The medical library, true to the traditions of the medical profession, has veered away from publicizing its services. There are many different ways of advertising, however, and among these are some methods that are quite applicable to a medical library. These have been quite clearly presented by Miss Mildred Naylor[2] and

Mr. Wm. D. Postell[3] in the *Bulletin of the Medical Library Association.* Upon reading Miss Naylor's article, which pays particular attention to the medical society library, I was struck by the fact that it was in the publicity field that our library had achieved the least success. We had been so busy with the organization details that we had neglected trying to arouse interest among the doctors who had not yet used the library. We had, of course, tried to prepare interesting bulletins, lists, displays, etc. in our library itself, but we had neglected placing any of these in the room where the Medical Society meetings take place. Our future plan, therefore, is going to be a definite publicity campaign. This will not be anything so radical as publishing articles on our prowess in the daily newspapers, but it will include many of the ideas advocated in these two articles.

In establishing a medical library connected with a public library several important points should be worked out in the beginning, and we unhesitatingly state them as recommendations.

1. It is important that the librarian in charge of the public library visualize the special nature of the duties of the librarian in charge of the medical library who will be obliged to face problems and render services which are entirely different from the usual public library services. This individual should be given as much latitude as possible in the development of the departmental library and in relationships with the medical clientele. It will take quite a while to develop the necessary knowledge in this special library field and to establish routines which will be satisfactory to the clientele and at the same time permit efficient operation of the library. Therefore, this person, once established in the position, should not be moved to other departments of the public library should a shortage of personnel occur and the medical unit placed under an untrained person. Constant changing of personnel, particularly the substitution of persons untrained in special library methods, will prove unsatisfactory in the operation of the special library and should be avoided at all costs.

2. It is essential that there be a definitely established relationship between the medical society and the library as to the responsibilities of each. This might be in the form of a contract. It should state clearly who must assume the responsibility for the salary of the librarians and assistants, the expenses for the room, its upkeep and equipment, as well as moneys for books, journals, subscriptions, binding and supplies. It should also specify the hours of opening and closing and these hours should be strictly observed. There is nothing more detrimental to any newly established department than irregular hours of opening. Such a contract can be modified as needs arise and it will prevent conflicts and difficulties between the two groups.

3. If possible the medical library budget should be placed on a

definite annual basis. To do this it is best to have the appropriation consist of a specified amount from the medical society dues rather than from individual contributions solicited from the members.

4. A cordial relationship and understanding between the head of the medical society's library committee and the librarian-in-chief of the public library is essential. Much can be accomplished if the public library executive becomes familiar with the needs and aims of the medical library and is sympathetic towards them and realizes how great a service such a library can render the community in matters of public health and social welfare as well as the more limited service it renders to its own physicians. Unless this difficult objective of complete understanding can be attained the medical library will not function efficiently as a part of the public library setup. In any change in the executive personnel of either the public library or of the department library every effort should be made by the predecessors thoroughly to acquaint their successors with the details of the inter-relationships that are operating effectively in the management of the branch library.

So far the differences between the two library systems have been discussed. There are of course many similarities but it is not necessary to go into these. Instead I would like to stress some points of unusual co-operation and aid that have been received in our medico-public library.

In the matter of co-operation I believe the medical library has no peer. From the very beginning the friendly and willing aid that we have received from medical librarians has been amazing. The neophyte librarian need have no fear about approaching even the most important of these personages as they seem to be interested not in just one library but in the welfare of them all. This cordial friendliness impressed us as the predominating characteristic of the medical library profession.

A good example of this spirit of extending a helping hand is exhibited in the *Handbook* prepared by the Medical Library Association.[4] Establishing a medical collection will be a much less difficult process now that this standard work on methods and procedure has been published.

Co-operation is also generously exemplified in the Exchange conducted by the Medical Library Association. Without this source of supply our journal file would be about half the size that it is now. Applying for membership in this association is what we consider our most forward step.

The Photoduplication Service offered by the Army Medical Library is certainly one of the best examples of this co-operation. Thanks to this wonderful and inexpensive service we are fast accumulating microfilm material on periodical literature to which we cannot subscribe.

The inter-library loan system as conducted by many medical libraries is also of immeasurable help. We could not have obtained many of the

references our patrons needed if it were not for the loans which we borrowed from our neighboring medical libraries. Quite often I'm sure our more than numerous requests have been a decided trial but never once have these libraries complained of the extra burden we have placed upon them.

Great co-operation is also shown to medical libraries by others outside the library field. National pharmaceutical firms are most generous about providing display material. Some of these houses have sent us photographs, portraits and illustrations that are really things of beauty as well as objects of professional significance. After displaying them we add them to our permanent reference files. Several of these firms specialize in annotated bibliographies, special bulletins and monographs which are most useful for medical reference. Then too, the monthly journals distributed by many of these companies are of decided reference value.

In fact, we have learned that many people, corporations and societies are willing and even pleased to contribute to the library. We receive special funds from the Chattanooga Chapters of the National Tuberculosis Association and the Woman's Field Army for Control of Cancer. The various insurance companies have been generous contributors. A large drug company located in Chattanooga has established a special fund for subscriptions to many scientific journals. The University of Chattanooga whose pre-medical department we serve has given many books and journals. Individuals too have been most generous. One has contributed a special collection on historical and cultural medicine. Others have given important material in their own particular fields. In short, many people have seemed eager to help build a medical library that will be a decided asset to our community. The present result of all this friendly co-operation is a collection which numbers 2,300 bound volumes, 5,000 unbound journals, and 125 current journal subscriptions. This then, has been our experience in building up our medical collection in the three years of its existence. As a whole it has been most enjoyable.

With the advent of war it was a great blow to have fifty of our most frequent and enthusiastic patrons out of a total of 150 registered borrowers leave for government service. We felt that our library would now enter a period of forced inactivity. Instead, the reference service given this year is more than four times that of the first year. The civilian doctors are using it more and more even though many of them are to us just voices on the telephone who fortunately possess wives, secretaries, office maids, and orderlies that can call for and return the material we collect for them. Then too, we felt that our total budget, half of which comes from voluntary contributions of the doctors, would be tremendously cut. Instead, the doctors who remained at home have willingly increased their contributions.

Our experience has led us to believe that a medical section in a public library is an interesting and worth while project. Persons interested in establishing such libraries will have to determine the advantages and disadvantages as they exist in individual communities. Perhaps, in closing it would be well to state these as we see them in ours.

ADVANTAGES

1. The book budget may be used exclusively for professional medical material as the public library may already have in its own book stock such indispensable reference aids to medicine and related subjects as *Readers Guide, Chemical and Biological Abstracts, Cumulative Book Index, Book Review Digest,* the various encyclopedias, directories and many other works too numerous to mention. It will also have popular material on medical history, biography and fiction. Then too, it will have non-technical treatises for the layman which the doctors find very useful in preparing lectures and radio talks for the general public.
2. Persons engaged in professions closely related to medicine such as dietitians, chemists, pharmacists, etc., feel much more free to come to such a library than they would to one established exclusively by the Medical Society. Quite often when they see the benefit that they obtain from using this collection they are eager and willing to donate special gifts in their own particular subject. It is not unusual to receive complete files of journals and texts from such patrons.
3. Those training for a medical vocation are given a helping hand by obtaining some information on the subject that will later form their life's work. They remember the aid that the library has given them and are most willing to contribute to it when they are established in their profession.
4. The public library accepts the responsibility for providing a trained librarian even though her salary may be paid by the medical society. In case of illness the public library will always provide a substitute so that the work of the medical department will not be interrupted. This insures the presence of a person at all times who is trained in library methods.
5. The library setup may be used as a conference room or meeting place by society members.
6. The members of the Medical Society, by sponsoring a medical library, provide the resources for a better study of public health and, thereby, contribute a great public service to the community.

DISADVANTAGES

1. The general public has greater access to purely professional literature in a medico-public library than it would have in a society library. Members of the laity who come to read up on imaginary ills could be a serious problem in a tax-supported institution where admittance could not be denied them. This difficulty, however, is largely overcome by the fact that medical texts are usually written in technical

terms that are far above the mentality and experience of the average curious reader. Such clientele can be tactfully directed by the library personnel to the medical books for laymen that are to be found in the regular collection of every public library.

2. The librarian serves the Medical Society but is under the direction of the Head Librarian of the Public Library.
3. A special collection is sometimes regarded as a questionable luxury in a public institution where quantity of service is looked upon as the most important element. Consequently, the quality of service of these collections is sometimes not recognized and they may be the first to feel cuts in appropriation, personnel and hours of opening. However, a definite contact would eliminate this difficulty.
4. The hours of opening have to conform to the public library's schedule. These are often not the hours that the doctors would prefer.

As the reader has already surmised we feel that the advantages decidedly outweigh the disadvantages. The Chattanooga medical profession is beginning to depend on its medical library and with this dependence is coming the realization that the library is the greatest asset which the Society possesses. It has accepted and is now profiting by the advice given by Sir William Osler, one of the great men of medicine—". . . There is no better index of the intellectual status of the profession in any town than the condition of its medical library. It will do you all so much good to work at it, particularly in connection with the medical society. . . . Tell some of the members from me, please, that money invested in a library gives much better returns than mining stock."[5]

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The Guides to the Literature of Veterinary Medicine

By FLORENCE HARDEN

IT HAS been definitely established that before any research project is begun, a thorough search of the literature should be made. This is both a time-saving and a dollar-saving procedure. If such a search is not made, time and money are wasted on a problem that may have been previously solved or previously discarded because of lack of evidence to show its practical importance. On the other hand, a search of the literature may indicate the need for further research and so attest to the validity of the problem at hand.

Mr. Arthur Connolly, Esq., speaking at the meeting of the American Chemical Society in Pittsburgh in September, 1943, mentioned the possibility of obtaining patents based solely on research of the literature about many scientific projects. He indicated that many new ideas with patentable possibilities are mentioned in the literature, but nothing has ever been done to protect or to develop their potentialities. In the field of medicine, a search of the literature is not only time and money-saving but life saving too. Not only must ideas be tested in vitro but in vivo as well. Usually the results of clinical procedure are compiled from a variety of test situations, rather than from one master project. Such trial procedures often are reported in the literature.

In order to test substances adequately, wide sampling is necessary. This is time consuming. Therefore, a search of the literature and of all possible previous tests is of paramount importance. Work with experimental animals has long been considered a part of medical research. From the time a drug or technique first reaches the point where it is ready for in vivo experimentation, through every phase of its manufacture, until it is on the market (and after, with each lot of many products), it is constantly tried and checked by laboratory animals.

Unfortunately, in some medical research, the contributions of the world of animals have been seen too much in connection with the laboratory animals and not enough in connection with the field of veterinary medicine. Because of its status as a medical science and because its patients are of great economic importance aand because of the availability of subjects for experimentation, veterinary medicine has yielded many

discoveries that have been, and others that might well be applied to human medicine. Cope illustrates this when he states, "Among medical men the view still holds that the wooden tongue of cattle is caused by the same organism as that which causes actinomycosis in man; veterinary surgeons are better informed . . . in that they are aware that wooden tongue is due to a specific bacillus known as the actinobacillus."[1]

The contemplation of a search of literature in many fields of human medicine should include consideration of the literature of veterinary medicine. The bibliography, no matter how carefully compiled by consulting references in journals and books devoted to human medicine, cannot cover the field with the thoroughness that bibliography, in the sense of including all the work published on a given subject requires, unless all phases of the science are investigated. For instance, it was a farmers' bulletin published by the United States Department of Agriculture in December, 1894, by Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, that first presented information on Salmonella infections. Since that time these organisms have been established as the causative agent in many diseases of animals and of man. While Carlos Finley has, until recently, been one of the few neglected Americans in the field of yellow fever research and control, a thorough study of this disease should include the work of Theobald Smith, who, under the direction of the Department of Agriculture and with the support of Dr. Salmon, studied the causative agent of Texas fever in cattle. It was his studies that led the medical sciences to the belief that "bugs" could transmit disease. A study of tuberculosis control in man and of the testing program is inadequate without a knowledge of the work that has been done in controlling cattle tuberculosis, of the area testing program, and of the refusal of the government to admit infected cattle from abroad into our ports. Dr. Arthur Meyers says in this connection that the medical profession is forty years behind the veterinary medical profession in the control of this disease. The veterinary medical profession can and has contributed to the method of handling tuberculosis in humans. No physician in the field can give his patients the benefits of the best of current knowledge without familiarity with the work of veterinarians.

We could go on to enumerate a great number of such contributions of veterinary medicine to human medicine, such as the use of tyrothricin in treating bovine mastitis before it was applied to the treatment of local infections in humans, to the early use of some of the sulfonamides in animals and to the use of the Stader Reduction Device which had its birth in animal work and grew to broadened use when it was adopted by the United States Navy; but the illustrations given here are sufficient to indicate the need for examination of veterinary literature concomitant

[1] Cope, Z.: Actinomycosis. Practitioner, v. 142, 1939, p. 319.

with the study of human medicine to see whether there are new or diverse indications.

Another field in which the literature of veterinary medicine contributes to human medicine is with transmissible and with diseases common to both species. For instance, avitaminosis is manifestly similar in both animals and man and while differing in dosage and method of administration, the method of treatment is similar. Encephalitis in humans can hardly be studied without a knowledge of encephalitis and encephalomyelitis in large animals. Therefore, a knowledge of veterinary medical literature seems required of anyone who makes a business of studying the literature on a given subject in the medical sciences.

As in all literature searching, the tools of the work in veterinary medicine are varied but center in the indices and in the abstract journals. Because veterinary medicine had its roots in medicine and in agriculture, its guides will of necessity include both fields. The three indices that are devoted primarily to human medicine but which contain some material in the veterinary medical field are: the *Index Catalogue of the Surgeons' General Office* (Army Medical Library), *The Quarterly Cumulative Index Medicus* and the *Current List of Medical Literature*. It should be especially noted that the Fourth Series of the *Index Catalogue* is more complete than the other series in its inclusion of veterinary medicine and that the Current List covers veterinary medicine very completely as one of the fields of medicine.

In addition to the medical indices the field of veterinary medicine has its own work, the *Index Veterinarius*. This is an English publication. It is international in scope; is arranged by author and by subject; covers books, theses, bulletins, reports and periodical articles; and is cross indexed. This publication appears semi-annually. At the present time this work is often at least six months behind the period covered but it is accurate and complete for the run of its issue—1933 to the end of 1942.

The field of agriculture indexes veterinary literature in the *Agricultural Index* and the *Bibliography of Agriculture*. The *Agricultural Index*, published monthly, emphasizes those aspects of the work of greatest interest to the farmer, such as disease control, sanitation, animal husbandry and animal breeding. It includes bulletins and reports of experiment stations and of other agricultural agencies; also books, monographs and periodical articles for the period 1916 to date. The arrangement is by subject. Since July 1943 the *Bibliography of Agriculture* has included in its monthly list a section on veterinary medicine in Part II, Periodical Literature. It is arranged under Animal Industry by species. Under each type of animal there is a section on breeds and breeding, feeds and feeding, veterinary medicine and miscellaneous. The food inspection work is covered under Agricultural Products. This bibliography is the only work in this country which currently indexes all journals, and majority

of books, bulletins and pamphlets on veterinary medicine. It is international in scope and is especially useful for South American publications and for items of interest in the field which appear in journals not devoted to veterinary medicine. Part I of this bibliography lists publications of the United States Department of Agriculture received in the department library by the name of the issuing bureau, or experiment station and the publications of other agencies by main entry. An excellent separate subject and author index provides reference to the entire bibliography.

Abstract journals have a variety of functions. They provide a rapid method of keeping up with the latest literature in a given field; they are a source of reprints on topics of special interest; and they servce as an index to the literature on a given topic since their arrangement is always by subject. It is through the abstract journals that the doors of foreign literature are open in essence as well as in title, especially to the worker who does not read the language of the original. However, abstract journals should not be consulted to the exclusion of the original. Not all abstractors are master craftsmen and at times they inject themselves too forceably into the abstract rather than remaining with the ideas of their subject. However, abstract journals are excellent guides and media to a speaking acquaintance with the field in general. The use of the abstract journals in compiling a bibliography functions as a subject guide to sources and as a means of deciding what articles are worth consulting in the original.

The leading abstract journals of use in the general field of veterinary medicine are the *Veterinary Bulletin, Biological Abstracts* (Section F) and *Experiment Station Record*. The first two are international in scope; the latter embraces the work done at the experiment stations of the United States Department of Agriculture only. All are arranged by subject. Usually the address of the writer of the original article is given so that reprints may be obtained. There are specialized abstract journals such as *Animal Breeding Abstracts, Dairy Science Abstracts* and *Nutrition Abstracts,* that contains a section on animal nutrition, and many journals contain an abstract section. However, *Veterinary Bulletin, Biological Abstracts* and *Experiment Station Record* are the only journals that cover the field in general and are devoted exclusively to abstracts.

The literature of veterinary medicine is a vital part of the literature of human medicine. In it are recorded the beginnings of the study of such diseases as foot and mouth disease and of brucellosis; the principles and progress of food inspection and its importance to public health. The world of animals cannot be divorced from the world of man so long as man lives on animal food, so long as man falls victim to diseases that also attack animals and so long as the past knowledge of medicine is a part of present practice. It is veterinary medical literature that points the way of the printed contributions of this field to medical progress.

Association News

LEASE-LEND AMONG THE MEDICAL LIBRARIES*

The U-boat and the bomber are no respecters of other peoples' property, and the medical libraries of this country and of the U.S.A. are among many who have suffered from their attacks. The loss of medical and scientific journals while in transit across the Atlantic has left us both with a serious problem to solve. At present, both we in this country and the Americans are trying to fill the gaps among our journals caused by such losses.

In July 1941 the Medical Library Association in America circularized the medical libraries of Great Britain, requesting details of losses sustained by air raids and by sinkings in transit. Following the receipt of such details, the Association collected from its members duplicate copies of much of the material required and despatched this material at its own expense to the libraries requiring it, or in some cases put material aside for transmission to this country after the war has been won. Thus, through the kindness of the Association, much has been done (and is still being done) to replace the losses of British medical libraries, as far as American journals are concerned.

Figures of such losses are not available yet, but at St. Thomas's, a comparatively small library, which takes 150 current sets of periodicals, we lost 70 parts of journals during the first year of the war, of which 50 per cent have so far been replaced gratis by the Association. Since then the position has slowly improved until, at the present time, our losses through sinkings have become negligible. There are about 30 medical libraries in Great Britain, ranging from the Royal Society of Medicine, with a holding of about 1,400 'live' journals, down to libraries smaller than our own. It is probable that at least 2,000 parts of journals have been lost in transit to this country. To this must be added the grievous losses sustained by bombed libraries, where whole sets of journals have been destroyed.

Another, although minor, problem arose when the Americans entered the war. Their scientific journals were subjected to a rigorous censorship which did not hesitate to obliterate or to cut out entire articles from journals destined for this country. Fortunately, representations from this side of the Atlantic soon proved effective and the practice has now ceased, although these mutilations will one day have to be made good.

Three British libraries (the Royal College of Surgeons, the London School of Hygiene and Tropical Medicine, and St. Thomas's Hospital Medical

* Reprinted from *St. Thomas's Hospital Gazette,* 41: 150-151 (Dec.) 1943. The author, Mr. Morton, is librarian, St. Thomas's Hospital Medical School, Hydestile, Godalming, Surrey, England.

School) belong to the Medical Library Association at present. We naturally feel that we should do something towards repaying the kindness of the Association, and we are doing what we can to replace losses sustained by our American friends. Unfortunately we have no organization of our own and must act as individuals in this matter. The cost of transmitting the required material to America will have to be borne between us, as will the labour involved. Naturally we do not grudge this, for whatever the help we are able to give, it will not reach the same scale as that which has been rendered to us and to other British libraries. At the same time, this matter stresses the need for a closer co-operation between medical libraries in this country than exists at present. Those of us who are members of the American Association have benefited greatly from such membership, and it is certain that a similar organization in this country could perform much useful work, both on behalf of libraries and readers.

C. C. Barnard (1943) has reminded us of the inevitable shortage of scientific literature in Europe consequent upon the bombing and destruction of libraries. He looks farther afield than merely to the replacement of such losses, however. He considers that this 'should form part of a much larger scheme, whereby the present holdings of learned periodicals in all important libraries in the country would be surveyed and the needs of research in the various centres of learning assessed, due regard being had to to existing subject specializations in various institutions. Interchanges of such could then be arranged so as to ensure the presence of complete sets of important publications in the libraries where they are most needed and the elimination of many incomplete sets where they are little used.' He goes on to suggest bodies capable of undertaking this scheme, and ends with the hope that its fruition would make possible the compilation of a really satisfactory union catalogue of periodicals in British libraries, to supersede the *World List of Scientific Periodicals* and the *Union Catalogue of the periodical publications in the university libraries of Great Britain*. This last is an urgent necessity.

Such tasks as these could well be shouldered by a British Medical and/or Scientific Library Association, working as an independent body, as a branch of the Library Association or in association with the Medical Library Association of America. An organization of this kind would welcome to its membership medical men interested in books and libraries in this country. It would make possible greater co-operation between medical libraries, both at home and abroad, and could deal with such other matters as the organization of a microfilm service, the exchange of duplicate material, and the extension of consultation and borrowing facilities between its members, both individual and corporate.

In America there appears to be, among the medical profession, a greater interest in and support for medical libraries than obtains in this country. The British had fine medical libraries before books were even printed in America; they have made some of the greatest contributions to medicine and to its literature and, since the Renaissance, they have left their mark on the history of medicine as surely as any other nation. Yet to-day there are 30 medical libraries in the British Isles, while the U.S.A., with a population only three times as great, possesses 250 medical libraries, eight of which possess more

than 100,000 volumes apiece. Two hundred of these libraries have come into being during the last hundred years, their existence no doubt being largely due to the interest and foresight of members of the medical profession in America.

Perhaps in the post-war era we shall find time to create an organization which will promote greater co-operation between medical libraries in this country and will, at the same time, stimulate the medical profession to great enthusiasm for their libraries. Until that time, and even after, British medical libraries should consider the next best thing—membership of the Medical Library Association of America. They will be sure of a warm welcome and will receive benefits which will far outweigh the modest 'dues' required of them; they will also learn of the achievements of those who are prepared to co-operate, and they will be stimulated by association with their go-ahead American colleagues to a resolve that the library shall take and retain its proper place in medical research.

Returning to the question of the replacement of war losses, both British and American, surely this is a matter sufficiently important to be undertaken by some official body with staff, funds and powers to deal properly with the problem. Whether or not this be so, we take this opportunity of thanking, on behalf of all British medical libraries, our American friends for their timely help, and we assure them that, as far as our limited facilities allow, we will do all we can to see that the Hun leaves no permanent gaps in their files of British medical literature.

LESLIE T. MORTON

REFERENCE

Barnard, C. C. (1943) *Lancet*, 2, 88.

THE ROYAL SOCIETY OF MEDICINE

Our President, Miss Marshall, has received an interesting letter concerning the operation of the Library of the Royal Society of Medicine. Thinking it should be shared by our members we are publishing it below:

23rd February, 1944

DEAR MADAM:

I was very interested to get your letter of January 6th, and happy to learn that Col. Ambrose Storck, M.C., U.S.A., was favourably impressed with what we are trying to do from The Royal Society of Medicine.

I think it would be most useful to you if I give you a short description of how we work and why, then you can apply any information that may be useful to your own problem.

This Library, established in 1808, during the last twenty years has expanded the service which it gives to its Fellows. It contains approximately 150,000 volumes and, before the outbreak of the war, was obtaining approximately 13,000 Medical Journals from all over the world. The war has, of course, cut off the supply of a large number of these journals but we hope to fill all the gaps after the war and have ear-marked money for this purpose.

The Society is supported entirely by the annual subscriptions of its Fellows. Visitors can only use the Library for reading and have to obtain a ticket to do this. We have to ration visitors in number and period very strictly in order that the Library privileges may be safeguarded for the Fellows who are paying for them.

We are considering extending our services to visitors but naturally with a view

to encouraging them to join the Society as Fellows and help on its work by their subscriptions. The enclosed leaflet gives a detailed account of the services rendered to Fellows. I also send a pamphlet prepared by the Librarian on how to use our Library and a copy of an annual report. These should give you a general picture of the work done here.

We are now arranging a microfilm service with the cooperation of our R.A.M.C. We propose to place book-film reading apparatus at certain centres in the war area, these centres being chosen by the R.A.M.C. and the organization necessary for the use of the films on the spot will also be carried out by that Body. A photostated page costs roughly thirty times as much as a book-filmed page therefore we shall save money by this method while making it possible to send information quicker and in greater volume thanks to Air Mail.

The Library of The Royal Society of Medicine is the only one of its size and type in the British Isles. Other Medical Libraries are, on the whole, small and local and do not, so far as I am aware, operate services of the type which characterizes the Royal Society of Medicine

I hope this information may interest and help you and I trust that some time in the future you may be visiting London and that you will let us know so that we can show you how we work.

Yours sincerely,

(signed) G. R. Edwards, Secretary
The Royal Society of Medicine

POL COLLECTION CATALOG

The Cleveland Medical Library Association plans to celebrate its fiftieth anniversary by publishing a catalog of its collection of medical books from the library of Dr. Nicolaus Pol, court physician to the Emperor Maximilian I. These books bear the signature "Nicolaus Pol, Doctor 1494," the year in which he obtained his medical degree. The latest publication date in the Cleveland collection is 1527. The editorial committee wishes to include in the catalog as complete a list as possible of books from Dr. Pol's library now in other libraries. Information as to the present or past location of any of his books will be gratefully received by Miss Ada L. Floyd, Librarian, Cleveland Medical Library Association, 11,000 Euclid Avenue, Cleveland 6, Ohio.

LEA AND FEBIGER NOW ALLOWING LIBRARY DISCOUNT

It is encouraging to learn that the firm of Lea and Febiger of Philadelphia, Pennsylvania, has decided to change its policy and is again allowing library discounts. We hope that medical librarians will not abuse this courtesy by extending it to individuals.

We wish to take this opportunity to thank Lea and Febiger for their aid to Medical Libraries.

(Mrs.) Eileen R. Cunningham, *Chairman*
Committee on Periodicals and Serial Publications
Medical Library Association

* * *

The Library of the Louisiana State University School of Medicine has just been granted an appropriation of $36,000 by the Board of Supervisors of the University for the purchase of periodical sets.

COLONEL HAROLD W. JONES, Libarian, Army Medical Library, Washington 25, D.C., is gathering data for a chapter to be written on the work that Medical Libraries are doing for the war effort. Association members are therefore urged to send to him any notices of or pocedures pertaining to the work their libraries are thus engaged in.

* * *

At the annual meeting of the Cleveland Medical Libary Association on January 21, 1944, DR. HOWARD DITTRICK was elected President of the Association. Dr. Dittrick, who retired from active practice on December 1, 1943, is now associated with the Cleveland Clinic where he is in charge of the editorial department, and secretary of the Frank E. Bunts Educational Institute.

* * *

The Editor asks that any existing surplus copies of the October 1943 issue of the *Bulletin* be returned to his office, Cleveland Branch, Army Medical Library, 11,000 Euclid Avenue, Cleveland 6, Ohio. This issue is exhausted.

* * *

PERSONAL NEWS

MISS GLADYS RAMSEY has resigned her position as Librarian at the University of Wisconsin Medical School Library and is now enrolled as a student at the University of Chicago, Graduate Library School. She will be one of the first students at the University of Chicago to receive the B.L.S. degree.

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MRS ESTHER GOETTING, formerly assistant to Miss Ramsey, has been appointed Librarian in Miss Ramsey's place.

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On March 19, 1944, DR. MAX H. FISCH, Curator of Rare Books, Cleveland Branch of the Army Medical Library, gave an illustrated lecture at the Cleveland Museum of Art. His subject was "Early Medical Illustrations."

* * *

LIEUTENANT COLONEL SANFORD V. LARKEY, M.C., is now on duty in an overseas theater as a representative of the Historical Division of the Office of The Surgeon General, War Department. That office is cooperating with the Subcommittee on Historical Records of the National Research Council as well as with historical offices in the War Department in the preparation of a history of the administrative, operational, and professional activities of the Medical Department during this war.

* * *

MISS L. MARGUERIETE PRIME, Director, Library and Department of Literary Research, American College of Surgeons, Chicago, is the author of a paper, "Organization of Medical Library Facilities to Aid Internees and Residents." This appears in the *Bulletin, American Association of Medical Record Librarians* for December, 1943.

MISS MARGUERITE E. CAMPBELL, Librarian of the Chicago Medical School, has been advanced in academic status to the rank of Assistant Professor of Library Science.

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The *Bulletin* is notified of the death of our Exchange Manager's father, Mr. William S. Rogers, on January 11, 1944. Our sympathy is extended to Miss Rogers.

* * *

At the annual meeting of the American Chemical Society in Cleveland, Ohio, April 4, 1944, COLONEL HAROLD W. JONES presented a paper on the "Photoduplication Service of the Army Medical Library" illustrated with slides showing the details of operation of its new film laboratory. In his address Col. Jones urged that free photoduplication be recognized as a legitimate library service.

* * *

MISS JENNIE R. GREENBAUM, Librarian of the Lillian W. Florsheim Memorial Library at Michael Reese Hospital, Chicago, spent a March vacation in Mexico. During her stay Miss Greenbaum visited several important libraries including the *Biblioteca Benjamin Franklin* and the *Biblioteca del Congreso de la Unión.*

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The appointment of PROFESSOR C.-E. A. WINSLOW as Editor of the *American Journal of Public Health,* succeeding Harry Stoll Mustard, M.D., is announced by the American Public Health Association. The new Editor takes office with the April issue.

* * *

MISS ELIZABETH M. RICHARDS, supervisor of technical processes of the Cleveland Branch of the Army Medical Library, has been elected president of the Library Club of Cleveland for the year 1944-45. Her election took place at the Club's twentieth anniversary dinner on April 20.

Exhibit

BOSTON MEDICAL LIBRARY

Oliver Wendell Holmes Exhibit

A selection of important medical manuscripts, books and pamphlets. Arranged by James F. Ballard.

1. A dissertation on acute pericarditis. January 12, 1836. For the degree of M.D. at the Harvard Medical School. Original manuscript and
2. Welch Bibliophilic Society imprint, 12°, Boston, 1937.

Puerperal Fever

3. Boston Society for Medical Improvement. Manuscript records. Vol. 4, 1840-1844, page 223. The original record of the reading of the paper on puerperal fever by Dr. Holmes, Feb. 15, 1843, and the Vote of the Society that Dr. Holmes be requested to publish the paper. This volume also contains numerous records pertaining to the occurrence of puerperal fever in Greater Boston during the years 1841-1842, leading up to the investigations of Dr. Holmes. See: Henry R. Viets, A mind prepared: O. W. Holmes and "The contagiousness of puerperal fever", 1843. In: Bull. Med. Lib. Assoc., 31: 319-325, 1943. Also: Reprint.
4. New England Quarterly Journal of Medicine and Surgery, Boston, April, 1843, 1: 503-529. The original publication of Holmes' paper read before the Improvement Society.
5. The contagiousness of puerperal fever. 28 p., 8°, [Boston, 1843]. Original paper covers. Autographed presentation copy. "From the New England Quarterly Journal of Medicine and Surgery". Not an actual reprint as the pages have been remade to permit the addition of a display title on the top half of the first page of text. The pages have been renumbered consecutively and increased to twenty-eight. There were twenty-seven in the journal printing.
6. Puerperal fever, as a private pestilence. 60 p., 8°, Boston, 1855. Original paper covers. Mint copy. Second edition with the title changed to Puerperal fever, . . . Pages 5-24 are given up to a discussion of the various criticisms of the original paper. Pages 25-57 are a reprint of the original paper as printed in the N.E.J. Med. & Surg., April 1843. Pages 59-60 list additional references and cases.
7. Second copy. Autographed presentation copy to Dr. H. J. Bigelow. Extensive alterations, corrections and deletions in Dr. Bigelow's hand, possibly for a third edition.

Medical Letters

8. Letter to Dr. David Humphreys Storer, concerning medical education. Dated July 7, 1868. Four pages.
9. Letter to Dr. Cornelius Rea Agnew concerning the Harvard Medical School and reform in medical education. Dated February 22, 1873. Four pages. See: Henry R. Viets, Two Oliver Wendell Holmes letters. In: Harvard Medical Alumni Bulletin, January 1943, 17: 33-35. Also: Reprint.
10. Letter on the physiology of vision with diagram of the visual track. Dated March 2, 1849. One and a half quarto pages.
11. Some stepping stones and stumbling blocks in the history of medicine. Manuscript. 31 p., quarto. Printed in the *Boston Medical and Surgical Journal,* June 1, 1882, 106: 505-513, under the title Medical highways and by-ways. Also reprint. Also reprinted in the *Medical Times and Gazette,* London, September 16 and 23, 1882, 2: 346, 356. With an interesting editorial. A lecture delivered before the students of the Harvard Medical School on May 10, 1882.
12. Histological broadside. Presented to the students of the Harvard Medical School, February 5, 1880. Dr. Holmes' drawings clearly show the cell nucleus.

Boylston Prize Dissertations

13. Library of Practical Medicine. Published by order of the Massachusetts Medical Society. Vol. 7, Boston, 1836. Containing: Dissertation on the question How far are the external means of exploring the condition of the internal organs to be considered useful and important in medical practice? Prize for 1836 awarded by the Committee of Harvard University.
14. Boylston Prize Dissertations. 371 p., 8°, Boston, 1838. Original cloth, uncut. Containing: Dissertation on intermittent fever in New England, awarded the Boylston prize for 1837; and a reprinting of the 1836 dissertation under the title of Dissertation on direct exploration.

Medical Essays

15. Currents and counter-currents in medical science. An address delivered before the Massachusetts Medical Society, May 30, 1860. 55 p., 8°, Boston, 1860. This address was used as number one in the first collection of essays published under the title of:
16. Currents and counter-currents in medical science. With other addresses and essays. 406 p., 12°, Boston, 1878.
17. Medical essays. 1842-1882. 445 p., 8°, Boston, 1883. First edition of the second collection of essays.

Miscellaneous Addresses

18. Homœopathy, and its kindred delusions; two lectures delivered before the Boston Society for the Diffusion of Useful Knowledge. 72 p., 12°, Boston, 1842.

19. Mechanism in thought and morals. An address delivered before the Phi Beta Kappa Society of Harvard University, June 29, 1870. 101 p., 16°, Boston, 1871.
20. The claims of dentistry. An address delivered at the commencement exercises of the Dental Department in Harvard University, February 14, 1872. 35 p., 8°, Boston, 1872.

The Medical Novels

21. Elsie Venner. A romance of destiny. 2 v., 12°, Boston, 1861. First edition in original cloth binding. Autographed presentation copy.
22. The guardian angel. 420 p., 12°, Boston, 1867. First edition.
23. A mortal antipathy. First opening of the new portfolio. 307 p., 12°, Boston, 1885. First edition.

Reviews and Book Notes

[CUSHING, HARVEY] *The Harvey Cushing Collection of Books and Manuscripts.* (Publication No. 1, Historical Library, Yale Medical Library.) xvi + 207 pp. New York, Schuman's, 1943. $8.50.

Yale University must be justly proud of one of its most distinguished alumni, the late Harvey Cushing, not only for his great career as one of America's foremost surgeons, and, probably, the world's most competent neurosurgeon, but also for his versatility and interest in things academic. Chief among these latter interests was a devotion and love of good books. This appreciation is especially evident in the recent posthumous appearance of his *A Bio-bibliography of Andreas Vesalius* (New York, Schuman's, 1943). This important book has been reviewed in the January 1944 issue of our Bulletin and in the opinion of the reviewer "It (the Bio-bibliography) is an achievement worthy of a place beside the author's *Life of Sir William Osler* and his contributions to neurosurgery."

It is harder to evaluate this short-title catalog of Dr. Cushing's books. Many private libraries give important clues as to the strong points and weaknesses of their owners and Dr. Rosenbach[1] has even gone so far as to say: "The degree of greatness of each of the Presidents of the United States can be determined by his interest in literature and in books. What the Presidents read and the contents of their libraries make an interesting study." But Harvey Cushing's library is not so revealing.

According to Klebs,[2] Harvey Cushing began his book collecting as a true bibliophile and especially enjoyed bidding at sales. Besides the purchase of several "firsts" of great medical importance he also became especially interested in Vesalius, collecting everything in this field he came upon including pictures. In 1923 Cushing acquired, on Klebs' recommendation, the pre-Vesalian work of Canano. By this time Dr. Cushing realized "that the mere bibliophile accumulation of showpieces could never give a broad insight into the evolutionary trend of medicine, and that since such an insight seemed very much worth while it would be necessary for him to systematize and orient his collecting activity."[2] But in Boston, Cushing lacked the space and leisure necessary to this task. However after his return to New Haven, Harvey Cushing found more time to devote to this important activity. This was the period, then, when he acquired many of his more important manuscripts and incunabula.

[1] Rosenbach, A. S. W.: *A Book Hunter's Holiday, Adventures with books and manuscripts.* Boston, Houghton Mifflin Co., c1936. p. 130.

[2] Baumgartner, Leona: Arnold Klebs as Humanistic Scholar. *Bull. Med. Libr. Assn.* 32:89 (Jan.) 1944.

As has been intimated it is extremely difficult to judge Harvey Cushing by his books. His taste was impeccable and there can be no quarrel with his selections. If he had a fault it was that of being a perfectionist.

Imagine a private library with such firsts as Brunschwig's *Cirurgia* (German text) 1497; John of Gaddesden's *Rosa Anglica* (1492); the first Latin (1491) and the first Italian (1493) edition of Ketham's *Fasciculus Medicinae;* the first printed book to contain a chapter on medicine, the *Opus Universo* of Rabanus Maurus (1467?); the first edition in Greek, the Aldine *De Materia Medica* of Dioscorides (1499); and the first edition of the *De Regimine Sanitatis* of Moses Maimonides to mention only a few of the important incunables in this magnificent library!

While the reviewer is pleased that in this catalog the rules of the *Short-title Catalogue* have been followed where practicable, he would have preferred that size be given in centimeters in the modern fashion rather than as 8°, 4°, etc., in Section IV, General Works. Octavo, quarto, folio, etc., refer to the folds in the make-up of sections, but we are apt to think of these designations as indicating size. For example Harvey's *De Motu Cordis* is a quarto but a small one and in size more comparable to an octavo. It is good to see the use of the vernacular form for authors' and printers' names. What is even more commendable is that in some cases where the author was better known under his Latin name this form has been retained. Examples: Agricola instead of Bauer, Vesalius instead of Wessel, Oporinus instead of Herbst, Paracelsus instead of Aureolus Theophrastus Bombastus von Hohenheim. But it seems strange to meet Frans de la Boë for Franciscus Sylvius.

It would have been helpful had the number of pages been given for all books, if for no other reason than to distinguish a pamphlet from a "real" book. And an index would have added much to the usefulness of this volume. For example Henry Schuman[3] informs us that Dr. Cushing brought together a fine collection of poems by medical men. It would have been of interest to have had these works grouped together under subject.

Except for the above minor criticisms this book should be a boon to all librarians engaged in cataloging historical medical collections. It will save many hours of time in helping to find vernacular forms and for several other reasons it will be appreciated by amateur and professional historians and book collectors. The design, format, typography, and paper show the publisher's usual very good taste. How fortunate that he was able to have this permanent contribution on such fine paper!

THOMAS E. KEYS

DRAPER, GEORGE, DUPERTUIS, C. W., and CAUGHEY, Jr., J. L. *Human Constitution in Clinical Medicine.* 273 pp., illustrated. New York, Paul B. Hoeber, Inc., 1944. $4.00.

Doctor Draper's great and productive interest in the constitution of man, and particularly the constitution of man as it predisposes him to or protects him from disease, is well known. The present volume, written in collaboration

[3] Schuman, Henry: The American Physician as Poet. *Bull. Med. Libr. Assn.* 32:74 (Jan.) 1944.

with two of his associates, is a brief and largely nontechnical explanation of his interest.

In the early chapters the concept of the uniqueness of the individual is presented. The fact is stressed that man does not live as a completely self-contained cosmos, but always in relation to his environment, and that each of us proves the truth of the poet's statement, "I am a part of all that I have met." The technics of anthropometry are presented, and some of the devices are described which are used to reduce a mass of data to workable proportions. In concluding chapters, examples are presented illustrating the concept that the people who have gallbladder disease are not only different people from those who have peptic ulcers, but recognizably different sorts of people. (Mathematical details are avoided in general. For one index (Ponderal Index) which is given considerable prominence two formulae are given, but the data presented seem to require a third.)

The reader of this volume cannot avoid being impressed with the importance of considering a patient first as a person, and then as a case of pernicious anemia, and there will be few who will not share some of the authors' enthusiasm for "typing" individuals in disease groups. There will, however, be some who will be sure to point out that there is still a man within the patient, and that while common things are common, black sheep do occur, and that with an organism as complex as man there will be many shades of gray. The authors would be sure to agree with this, pointing out that they refer to tendencies rather than tight compartments separating one constitutional type fom another.

ROBERT F. PARKER, M.D.

FULTON, JOHN F. *Physiology of the Nervous System.* 2d ed. 614 pp. with 112 illustrations. London, New York and Toronto, Oxford University Press, 1943. $9.00.

The first edition of this monograph immediately became recognized as an authoritative text on neurophysiology. It had many merits, an outstanding one being that structure and function were correlated, not in a speculative manner, but on the basis of results derived from experimentation. The author's own important contributions in this field have not only filled many gaps but have provided him with the experience necessary to form critical judgments regarding the work of others. His continued interest in applying the results of such studies to clinical problems is manifested throughout the text.

The revision of standard texts or monographs too often consists in making only casual additions or deletions and corrections of accidental errors. Real revision is more than a process of patching new material into the old; it requires the blending of new discoveries with well established facts so that modern viewpoints emerge without diminishing the value of sound interpretations of the past. Fulton's revision is of this nature. Considerable portions have been rewritten and valuable new material has been added. The type has been reset so that the information per page area has been significantly increased. The modernized references constitute a valuable guide to work in neurophysiology from ancient to modern times.

As in the first edition, the analysis of central nervous functions revolves around anatomical segmental fulcra. The functions of the spinal cord, medulla, pons, hypothalamus, thalamus, cerebral cortex, cerebellum, etc., are taken up in successive chapters. At each stage revisions in our thinking are evident. While this mode of approach has obvious advantages in a text, the expedient occasionally leads to difficulties in analyzing a system which functions so largely in longitudinal directions. The author has generally circumvented this embarrassment with amazing dexterity. The second edition of this monograph will find a large field of usefulness among students of neuroanatomy, physiology and neurology.

One suggestion may be ventured for possible consideration in future revisions. From the viewpoint of a physiologist who recommends the monograph for student reading, some of the anatomical detail available in current texts in neuroanatomy could perhaps be replaced to advantage by more amplified discussions as to the ways in which knowledge of central nervous mechanisms has been gained through use of action potentials and by inclusion of such practical subjects as the physiology of sleep, pain etc.

CARL J. WIGGERS, M.D., SC.D.

1843-1943. One Hundred Years. [38 unnumbered pages.] Philadelphia, Blakiston Company, [1943].

Perfect freedom, both religious and civil, was the basis for the establishment of William Penn's colony. This spirit of toleration and its resultant harmony helped to make Philadelphia into a leading intellectual center early in its history.

Among the members of the Penn party who arrived in 1682 was William Bradford, a young English printer. Bradford felt that it would be profitable to establish a press in Philadelphia. He therefore went back to England and returned to the new colony in 1685 "after great charge and trouble, I have brought that great Art and Mystery of Printing into this part of America." Americans owe much to Bradford and his successors who by the medium of printing helped make Philadelphia one of the great cultural centers of our country.

In this attractive brochure the history of the Blakiston Company is traced. Mr. Presley Blakiston began his career in 1825, at the early age of twelve, as an assistant in the auction rooms of Moses Thomas. It was Moses Thomas who handled the trade sale features of the *Literary Fairs* introduced by Matthew Carey about 1802. A few months later Presley Blakiston began to work with Carey & Lea, the important publishing firm. In July 1843, Mr. Blakiston formed a partnership with Robert Lindsay as printers and publishers. Thus began one of America's foremost publishers of medical and scientific texts. That their centenary has recently been observed speaks very well, indeed, for the integrity of the company. May it be their pleasure to continue to serve the medical and allied professions with their deservedly well made reputation for the centuries to come.

THOMAS E. KEYS

LEVINSON, ABRAHAM. *Pioneers of Pediatrics.* 120 pp. New York, Froben Press, 1943.

This compact volume gives a concise history of the men who from 400 B.C. up to the present have contributed fundamental discoveries culminating in a special field of practice known as pediatrics. This is a history of men, from Hippocrates to Bela Schick. It includes that renowned "general specialist," Sir Jonathan Hutchinson, because of his definition of the signs of congenital lues. The unfortunate von Pirquet earned recognition by introducing the cutaneous tuberculin test, the forerunner of allergy. Von Behring, through his discovery of diphtheria antitoxin, has been responsible for the saving of the lives of untold millions of children.

These men form landmarks in the history of pediatrics. The inclusion of full page photographs of twenty-eight of these famous individuals adds much to the volume.

To those interested in pediatrics, medical history or public health, this will prove a handy reference volume.

HOWARD DITTRICK, M.D.

TALIAFERRO, WILLIAM H., Ed. *Medicine and the War.* (Charles R. Walgreen Foundation Lectures). vii + 193 pp., illus. Chicago, The University of Chicago Press, c1944. $2.00.

In 1943, the Charles R. Walgreen Foundation for the Study of American Institutions sponsored a series of ten lectures on "Medicine and the War." The lectures were all by members of the faculty of the University of Chicago and have been brought together here for publication.

Following a brilliant, if brief, review of the history of military medicine by Dr. Arno B. Luckhardt topics are discussed as follows: Food and the War, Chemotherapy, Malaria, Insects and Disease, Shock and Blood Substitutes, Aviation Medicine, Neurological and Psychological Effects of Cerebral Injuries, Psychiatry and the War, and Chemical Warfare.

This is indeed a handy outline for medical librarians who are often called upon for recent information on these subjects. It will be equally welcomed by the medical officers of our armed forces for its clear exposition of many of the problems of military medicine of the present war, although primarily addressed to the lay reader.

THOMAS E. KEYS

THOREK, MAX. *A Surgeon's World, the Autobiography of Max Thorek, M.D.* 402 pp. Philadelphia, J. B. Lippincott Co., 1943. $3.75.

A Surgeon's World is a most entrancing account of the life and work of one of America's noted surgeons, Max Thorek. His early life in the old Austro-Hungarian Empire, his trip to and reception in this country by a so-called "rich uncle," his struggle to obtain a medical education, his early practice in the slums of Chicago and finally his success in founding the American Hospital are replete with stories of great human interest. The author expresses his experiences vividly in his preface, "I have sighed deep,

and I have laughed free. I have known the utter bitterness of poverty, and I have basked in the sunlight of success. I have known hunger and I have sat at the tables of plenty. I have endured loneliness, and I have been given love. I have dwelt in hell and I have entered heaven."

Mrs. Thorek affectionately called "Firn" shares every experience of her husband. His tribute to her unfailing sagacity and love appears repeatedly throughout the book.

An unusual chapter gives an interesting account of the author's contacts with famous people of the stage and screen. Thorek's previous writings on modern surgical technic, surgical errors and safeguards, the human testis and its diseases, plastic surgery of the breast and abdomen have established his eminence in the medical profession.

He has also obtained considerable fame as a photographer and is the author of a book entitled "Creative Camera Art."

Although this volume is written for the general reader, the author has incorporated much concerning his research work which will prove valuable to the physician.

Few biographies or autobiographies written by surgeons excel this book in literary style or in human interest.

A. I. LUDLOW, M.D.

THOREK, MAX. Surgical Errors and Safeguards; with a Foreword by Sir Hugh Devine, and a Chapter on Legal Responsibility in Surgical Practice by Hubert Winston Smith. 4th edition, completely revised. 1085 pp., illus. Philadelphia, J. B. Lippincott Company, c1943. $15.00.

Before passing judgement on a book, a reviewer should endeavor to ascertain the purpose in the mind of the author which determined his selection of subjects and the manner of their presentation. This book is not for the medical student. It is not systematic enough, and the emphasis on various subjects is too uneven for the beginner. Many subjects are passed over very rapidly and others are considered in great detail.

The author evidently is interested in the young surgeon—out of medical school and probably beyond his hospital training—who is attempting to fly by himself, often in localities away from the large medical centers. He may not have at hand competent consultants. He can turn to this book, as he might sit down with an old experienced clinician, and seek advice, especially advice as to how to keep out of trouble. For instance, there are excellent pages on malformations and anomalies of the ducts and vessels about the gall bladder; on how to avoid injuries to the nerves in thyroidectomy; on dangers and safeguards in blood transfusions, etc., etc.

No honest reviewer could say he agreed with every statement made, but on the whole, and from the practical point of view, the advice is excellent and up to date. If here and there the reader is sceptical of some statement, the subject matter is presented in such a way as to stimulate thought and further investigation elsewhere; one is not irritated to withdraw into a protective shell of conceit and inactivity.

A novel and excellent chapter on the legal aspects of surgical practice

is written by Hubert Winston Smith of the Harvard Law School and Harvard Medical School.

The book is worth its price if only for the first chapter, covering some remarks on surgery in general, and on the qualifications of a good surgeon. The reviewer cannot refrain from quoting two paragraphs on "New, Highly Specialized or Inadequately Tested Operations."

> The very great publicity which certain operative procedures receive at the present time, procedures which are often promulgated as a means to advertise certain operations, is to be blamed for a good many of the unfortunate results which follow injudicious surgery. In the first place, new surgical methods of operating may have received very thorough study from those advocating them, and in their experienced hands such operative procedures may be executed with more or less impunity and with good results. It does not follow, however, that facility in their technic can be easily acquired by others, and that the operations, as described in the professional and lay press, can be successfully performed by young and inexperienced men who are, unfortunately, too anxious to bring themselves into prominence by the execution of some new operation which seems brilliant. It is a matter of the deepest concern to the honor of surgery that far too many operations are carried out in this spirit by men who are unfamiliar with the practical technics which they attempt to copy, and for which unfamiliarity the trusting patients pay the penalty.
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> "Again, the prominence given new surgical methods in the public press leads the public to seek the application of these methods in preference to the older ones. They are often demanded in the belief that they are an advance, and the local surgeon is tempted to comply with such demands, perhaps against his own judgment, and to perform an operation which is unfamiliar to him—very frequently with unfortunate results.

CARL H. LENHART, M.D.

TUCKER, AUGUSTA. *The Man Miss Susie Loved*. 509 pp. New York, Harper Bros., 1942. $2.75.

While this is the companion piece to "Miss Susie Slagles' " it is chronologically the first of the two and, as is the other, is based on actual happenings. The founding and building of Johns Hopkins University and Hospital is the main theme of the novel. The Listerian principles of aseptic surgery were supposedly presented to Mr. Hopkins by a Major Christopher Beverly, who after proposing marriage to Miss Susie Slagle is a victim of "hospital gangrene" following an accident in the Baltimore flood of 1868. At his death the lives of these people have as a common ground the education and welfare of America as it is personified by the University and Hospital.

Among the famous men who come to life in these pages is Dr. John Shaw Billings of The Surgeon General's office. It is he who after building up The Surgeon General's Library, founding with the assistance of Dr. Robert Fletcher the *Index Medicus* and the famous *Index Catalogue* and the American Surgical Association, is called to Johns Hopkins University and who heads the Building Committee of the Hospital. Dr. William H. Welch is given the fictional duty of asking Miss Slagle to run the boarding house that supposedly houses the first six doctors who are to be the "House Officers" of the still unfinished Hospital. Miss Tucker's careful documentary study of these times makes this a well written novel truthfully built on fact.

MARY BERNSTEIN

WAUGH, THEODORE R. *White Blood Cell Differential Tables.* 126 pp. New York, D. Appleton-Century Co., 1943. $1.60.

This book, with an introduction containing descriptions of methods for white blood cell and differential counting, statistics of expected errors and explanation of the use of the tables, consists of a set of tables for converting percentages of cells in a differential white blood count to absolute numbers of cells.

The description of the methods is too sketchy to be well understood by the novice and is probably unnecessary for the experienced technician. The white blood cell counting method described, is unusual and probably no better than the standard methods used. The section on statistics is brief, simple and easily understood.

The main part of the book as has been mentioned is made up of a set of tables. Each page represents a white blood count, with values from 10 to 10,000 per cu. mm., generally increasing by increments of 100. For each count, the percentages from 1 to 100 are converted to absolute values. It is thus possible to find immediately the absolute number of any variety of white blood cell, once the total count and differential count have been performed. Since the tables do not include values for white blood counts above 10,000 per cu. mm., it is necessary to use combinations of tables for counts above this level. It seems to the reviewer that longhand multiplication or slide rule calculation would be as simple as use of the tables in such circumstances.

The author contends that expression of the various white blood cells in absolute figures is preferable to expression in percentages. The reviewer agrees to this in general, although it seems doubtful that it is necessary in every case to figure out the actual numbers.

The author states that publication of the tables was prompted by requests from "clinicians, pathologists and laboratory workers who have seen them in use." The reviewer does not feel that the tables would be of much help, but if others find them convenient to use, they are presented herewith in compact form.

ROBERT W. HEINLE, M.D.

ALVAREZ, WALTER C. *Nervousness, Indigestion and Pain.* 488 pp. New York, Paul B. Hoeber, Inc., 1943. $5.00.

This volume is a worthy successor to Dr. Alvarez's earlier book, *Nervous Indigestion.* The author states in his preface that this is a "different" sort of book—one which deals more with sick, unhappy persons than with their diseases, more with symptoms and their meaning than with disease entities. It is different because it at least mentions those common but poorly understood conditions, such as pseudo-cholecystitis, pseudo-ulcer, and pseudo-appendicitis, which the average writer forgets to talk about because there are no headings for them in the old textbooks which he used as a pattern. Most of all, the book is different in that the author takes the reader with him into his office and there shows him how an internist's mind works as he tries to make a diagnosis.

Dr. Alvarez points out the many ways in which the emotion can affect the digestive tract and devotes fifty pages to the making of the diagnosis from a good history. This chapter should prove invaluable to every medical man, for in many cases a good history is the most important single factor in making a diagnosis.

The author shows how necessary it is to uncover the patient's fear and the real reason for consulting a physician. He makes many useful observations on problems that come up in planning the examination of the patient, handling the nervous patient, combating disturbing diagnoses previously made and in telling the truth to patients. The chapter on abdominal pain, constitutional inadequacy, nervous breakdowns, types of neurotic patients, insomnia, constipation, migraine, gastritis, nervous diarrhea and miscellaneous symptoms furnish a vast amount of information, described in a way seldom found in the usual textbooks.

The many unique quotations at the head of each chapter prepare the reader's mind for the subject matter which follows and at the end of the book are an excellent bibliography and suggestions for further reading.

It should prove invaluable to patients, medical students and doctors whatever their years of experience. This is the kind of a book the reviewer desired but never found when he began the practice of medicine.

A. I. LUDLOW, M.D.

AMERICAN LIBRARY ASSOCIATION. COMMITTEE ON POST-WAR PLANNING. *Post-War Standards for Public Libraries.* 92 pp. Chicago, American Library Association, 1943. $1.50.

Prepared at the request of the National Resources Planning Board and with its financial assistance, this pamphlet embodying post-war standards should prove of wide general interest. Dr. Joeckel, Dean of the Graduate Library School of the University of Chicago, and his Committee have prepared a program which takes cognizance of existing problems before devoting nine chapters to objectives; service; government and administration; size and area; finance; buildings; book collections, personnel, and technical processes. Under the various headings a range of figures is given which will be particularly useful for those who wish to use the *Standards* as a measuring stick. In lieu of a bibliography there are numerous references in footnotes. Concrete and concise, this pamphlet will be a boon to librarians for use with board members, because it sets down in readable and convincing fashion so many ideas which have been difficult to get across. It would be worth-while if this final paragraph of the Introduction might be quite generally read: "Finally, the obectives, policies, and standards of public library service should be subjected to continued re-examination in the light of unpredictable future developments. No statements of standards should be permitted to freeze the patterns of library administration or service. The public library should be a dynamic agency, always seeking to adapt its activities to the changing needs of the people it serves."

There will be those who will criticize these *Standards* as being beyond attainment; however, it would seem as though the profession, recently characterized as the most masochistic of all professions, had gone long enough

on the assumption that the meek shall inherit the earth. It is necessary only to look back at libraries in the depression period and at the recent lack of recognition to see the disheartening results of such an attitude. Dr. Joeckel and his Committee are to be congratulated on having set forth comprehensive standards with boldness and vision.

ELIZABETH M. RICHARDS

AMERICAN LIBRARY ASSOCIATION. *Glossary of Library Terms, with a Selection of Terms in Related Fields. . . .* viii, 159 pp. 24 cm. $3.50. Chicago, American Library Association, 1943.

This glossary was begun in 1926, under the auspices of the Board of Education for Librarianship of the American Library Association. The committee in charge of the work, after several changes in name and personnel, became, in 1941, the Subcommittee on Library Terminology of the A.L.A. Editorial Committee, under whose direction the book was prepared and published. The editor is Miss Elizabeth H. Thompson, Head, Catalog Department, University of North Carolina Library. Many librarians and co-workers in related fields have contributed to the gathering together of the terms and definitions.

Terms listed are those in general use in American libraries. Foreign terms, with a few exceptions, are not included. Terms from the related fields of archives, bibliography, publishing—including printing, binding, paper, prints and illustration—are defined. One very useful feature is the inclusion of terms used in microphotography, words and phrases whose meaning probably is as unknown to many other library workers as to this reviewer. Only the most stabilized personnel terms are included, the number and variety of such expressions describing the nature of work done being too great to permit listing all of them. In appendixes are given book sizes, type sizes and a selected list of abbreviations encountered by those who worked on the glossary.

Many definitions have been reprinted with little change from the preliminary American second edition of the A.L.A. *Catalog Rules,* in order that the two works might be used interchangeably for these terms. Bookbinding definitions were taken, with a few changes, from those which Louis N. Feipel prepared for a projected manual on binding. Music terms are limited to those needed in the technique of cataloging, and definitions are taken from those in the A. L. A. *Catalog Rules* and the preliminary draft of a handbook being prepared by the Music Library Association.

In spite of wartime restrictions, the format of the book is good. The paper is not too poor, the type, while small and not very black, is clear and easily read. Pages are well arranged for both appearance and legibility. The binding is both sturdy and attractive.

The final test of such a book, of course, is in the use of it. Only by constant reference to it can one determine whether the terms needed have been included. It appears, on inspection, however, that this is the case. In a few instances the entries have already been tested and found satisfactory in the reviewer's own work. Definitions are simple and clear. While "see also" references are always useful, their absence from this book does not

seem serious, and is compensated for to some extent by the inclusion of synonymous terms in definitions and frequent use of "see" references.

The glossary should be useful to experienced library workers, but especially valuable to library school students. While the terms from related fields will be of value to the librarian, binders, publishers and workers in other collateral occupations, in their turn, should find the library terms of use to them. The medical librarian will find the book serves the same need as in libraries of other types. Since many physicians are lovers, and in some cases, discriminating collectors, of books, there may be a place for this work in their private libraries, as well.

JEANETTE BEEBE

Anesthesia Abstracts, Volume XV. Minneapolis, Burgess Publishing Co., 1943. $2.75.

This is another volume of that excellent series of "multum in parvo" of the literature of anesthesia and allied subjects, edited by the Section on Anesthesia of The Journal Club of the Mayo Clinic. Particularly valuable at this time is the assembling of abstracts dealing with blood. In war casualties and civilian catastrophes we are all vitally interested in blood banks, blood substitutes and transfusion.

The sections on anesthesia comprise a wide variety of the phases of this subject. Their compilation is a continuation of a valued service to the progressive student in anesthesia.

HOWARD DITTRICK, M.D.

BERT, PAUL. *Barometric Pressure. Researches in Experimental Physiology.* Translated by Mary Alice Hitchcock and Fred A. Hitchcock. xxxii, 1,055 pp. 8°. Columbus, College Book Co., 1943. $12.00.

This fine book will be gratefully received by many readers; it will be highly valued by scientists interested in high altitude physiology. Dr. Fred A. Hitchcock, Associate Professor of Physiology at Ohio State University and Mrs. Mary Alice Hitchcock, formerly Professor of Romance Languages at the University of Akron, collaborated to produce this splendid English translation of Bert's original, and now extremely rare, French edition of *La Pression Barométrique.* Dr. and Mrs. Hitchcock, President Bevis and other officials of Ohio State University and Mr. Long of the College Book Company deserve sincere thanks for their ambitious undertaking in making this fundamental work on altitude physiology available in these crucial times.

Professor John F. Fulton acquaints the reader with Bert's kaleidoscopic career in an illuminating foreword. Paul Bert, born on October 17, 1833, was destined to become an engineer, but he was attracted by the intricacies of law and eventually passed his bar examination. His searching mind found law practice dry and he turned to medicine; he was graduated and received his M.D. degree in Paris, in 1863. His interest turned to physiology, and he came under the tutelage of Claude Bernard, who was impressed by his pupil's ability, and saw to it that in 1869 Bert was given the Chair of Physiology at the Faculté des Sciences at Paris, which he himself had

formerly occupied. Bert became known for his work on grafting of animal tissues and developed a technic which became of great importance in the Franco-Prussian War of 1870 and 1871. This war and the end of the Napoleonic dynasty influenced Bert toward another career. He became involved in the political destinies of France, and held several high government offices. He devoted most of his energy to these political duties until 1881. After that, his political career declined, and science gained thereby. However, in 1886, his government sent him to French Indo-China on a special mission from which he did not return; he died of dysentery in Hanoi on November 11, 1886.

La Pression Barométrique. Recherches de Physiologie Experimentalle, Bert's famous book, was published in 1878. The studies leading to this comprehensive presentation were conceived at about the time he accepted the professorship in Physiology. The book is dedicated to an intimate friend, Dr. Jourdanet, whose studies on climatology in Mexico had brought Bert to investigate the effect of changes in barometric pressure on animal organisms. Jourdanet furthermore supported Bert's studies, furnishing the means for construction of an arsenal of ingenious low pressure chambers, which even decades later would have been the pride of any high altitude physiology laboratory in the world.

The present translation of the book, *Barometric Pressure,* contains 1055 pages, and, like the original, is divided into three parts. The first part, *Historical,* covering 502 pages, presents Bert's painstaking collection of historical descriptions of mountain juorneys to most parts of the world, balloon ascensions and theories of the effects of high altitudes on the organism, as well as laboratory experiments along the same lines. The second part of the book, *Experiments,* 441 pages, describes Bert's hundreds of experiments in chronologic order. These include studies on the influence of changes in pressure on chemical, physiologic and biologic reactions. In the third part, *Recent Data, Summary and Conclusions,* 92 pages, Bert draws his final conclusions, based on the description of the historical milestones in the first and his own experiments on the second part of the book. The ultimate result of Bert's work is emphasized by Fulton in the Foreword, when he states that Bert "proved beyond all doubt that the principal symptoms of altitude sickness arise from reduced partial pressure of oxygen and not from diminution of total pressure." Numerous illustrations accompany the text; these are original woodcuts of cleverly constructed apparatus used in Bert's work.

No one can read this classic on high altitude studies without being impressed by the wealth of valuable material it contains. Readers will be deeply moved at times by the sincerity and heroism of the pioneers who contributed to the material of its contents, for instance, in reading (on page 963) the note of one of the survivors of a balloon ascension, "We start, we rise in the midst of a flood of light, emblem of joy, of hope!—Three hours after the departure, Sivel and Croce-Spinelli were inanimate in the basket! At 8000 meters altitude, asphyxia had struck with death these disciples of science and truth!"

Bert's work did not escape the fate of many fundamental reports on research. It was criticized and attacked and the book was almost driven

completely from the libraries and shelves of scientists. Its resurrection at this time is of immense value in a cause of utmost importance; it is also a triumph and a tribute to the eternal value of true scientific investigation.

OTTO GLASSER, M.D.

COBB, STANLEY. *Borderlands of Psychiatry.* 166 pp. Cambridge, Harvard University Press, 1943. $2.50.

Dr. Stanley Cobb, psychiatrist at the Massachusetts General Hospital, has long been interested in the borderlands of psychiatry. In this book he has expanded the Lowell Lectures given in 1940 and added to them some material more appropriate for a strictly medical audience. The fields which he has investigated are those concerned with stammering and stuttering, feeblemindedness, epilepsy, alcoholism, and the psychoneuroses. It is estimated that there are about 600,000 patients in psychiatric hospitals in the United States. To this group might be added those individuals in the borderland, amounting to 6,000,000 people.

Various chapters in this short monograph deal with subjects such as psychosomatics, speech, and language defects, the anatomical basis of emotions, consciousness, epilepsy, and the psychoneuroses. Each topic is handled expertly with adequate references to the literature and frequent useful diagrams, illustrating the various points under consideration. The book is, therefore, a simplified, straightforward, up-to-date discussion of some of the more important topics related to nervous and mental diseases. The chapters are excellent and should find a wide audience, particularly sudents, nurses, and lay workers, associated with hospitals and institutions. This book should be in every medical library and should be recommended for reading to anyone making inquiries in regard to the problems discussed. Here one will find a clear presentation of the functions of the frontal lobes of the brain, the anatomical basis of emotions, electroencephalograms and the various areas of the brain concerned with speech. There are many years of work in neuropathology, neurology, and psychiatry packed into this short book. All of the material is set forth in a clear, interesting manner.

HENRY R. VIETS, M.D.

SEAGRAVE, GORDON S. *Burma Surgeon.* 295 pp., 23 illustrations, map. New York, W. W. Norton and Co., Inc., 1943. $3.00.

The Burma Surgeon is the story of a pioneer and adventurer, a man who cares little for conventionality, a man with zeal for helping humanity, a man who gets things done and has fun doing them.

Dr. Seagrave, "daddy" to his nurses, began his medical mission work in the North Shan States, with a wastebasket full of broken down surgical instruments salvaged from Johns Hopkins. His purpose was stated thus, "All I wanted was plenty of jungle and thousands of sick people to treat, preferably with surgery." The Burma surgeon's wish was more than fulfilled for after twenty years of splendid accomplishments in medical missions, he rendered an important service to his country with his army unit which accompanied General Stilwell on his memorable retreat through the jungles of Burma to India.

It was my privilege during a sixteen month tour of the world in 1907-08 to visit Burma, journeying up the Inawaddy beyond the city of Bhamo. This journey, together with my experiences as a medical missionary for twenty-six years in Korea and during the first World War in Siberia, has given me a deep appreciation of Dr. Seagrave's amazing story.

One secret of the Burma surgeon's success is found in his training of native helpers and in the confidence he placed in them.

Aside from the war episode the essential elements of his work can be duplicated in scores of medical mission hospitals throughout the world.

Dr. Seagrave's book should render great service to all these institutions by calling the attention of the public, as perhaps no other writing has done, to the value of medical missions.

The reader is warned against starting this fascinating book unless prepared to finish it within twenty-four hours.

A. I. LUDLOW, M.D.

HAAGENSEN, C. D., and LLOYD, WYNDHAM, E. B. *A Hundred Years of Medicine.* 444 pp., illustrated. New York, Sheridan House, Inc., 1943. $3.75.

The two authors, Dr. Haagensen, an American surgeon, and Dr. Lloyd, an English specialist in public health, have collaborated to write a history of a hundred years of medicine.

In this American edition Part 1 and most of Part 2 remain unchanged, but the rest of the book has been entirely rewritten by Dr. Haagensen who assumes the responsibility for the opinions expressed therein.

There are forty-two pages of illustrations, many of them not reproduced in any previous historical work. There is also a comprehensive bibliography and a complete index.

The book is divided into four parts.

1. *Medicine up to a Hundred Years Ago.* The origins, theories and scientific progress of medicine is briefly reviewed together with the surgical limitations, sanitary conditions, and some of the infectious diseases of a century ago.

2. *Medical Science during the Last Hundred Years.* Beginning with the discovery of the animal cell, the authors mention some of the new aids to diagnosis, discuss at length the germ theory and finally deal with some of the great diseases: tuberculosis, pernicious anemia, diabetes, diseases of the heart and nephritis. They include in their story events connected with the lives of the discoverers of these diseases.

3. *Surgery during the Last Hundred Years.* This section records the beginnings of modern surgery, the coming of anesthesia, the conquest of surgical infection, some of the triumphs of surgery and the story of the development of surgical specialties.

4. *New Social Aspects of Medicine.* This last part deals with the phenomenal progress of medicine during the past century, illustrated by charts and statistics, reforms in medical education and finally the doctor's dilemma in the utilization of the vast modern armamentarium of medical knowledge for the benefit of society.

Group medical practice is commended. The authors make no claim to a comprehensive medical history. The book is primarily suited to the layman interested in the history and some of the problems of medicine. It should also prove of value to the practitioner and student who have not found time for any special study of medical history.

A. I. LUDLOW, M.D.

HILL, JUSTINA. *Silent Enemies; The Story of the Diseases of War and Their Control.* xii, 266 pp. 21 cm. New York, G. P. Putnam's Sons, c1942. $2.50.

Today many persons are deeply concerned in the present health and future welfare of great numbers of men in service. This book treating of the diseases of war and their control should prove helpful as well as comforting to those concerned, for Miss Hill, a bacteriologist at Johns Hopkins Hospital and the author of *Germs and the Man* (1940), writes of the progress made in the care of men in service and the application of the knowledge thus gained to civilian treatment.

This work is divided into several major parts, including diseases of the jungle—malaria and yellow fever; diseases of the East—typhus, plague, cholera, African sleeping sickness, kala-azar, oriental sore, relapsing fevers, trench fever, and trench mouth; infections from wounds and burns—tetanus, gas gangrene, and aerobic infections; diseases propagated in air-raid shelters and training camps—influenza, pneumonia, meningitis, diphtheria, and tuberculosis; filth diseases—typhoid and paratyphoid fever, and dysentery; venereal diseases—syphilis and gonorrhea; and additional virus diseases—mumps, measles, encephalitis, poliomyelitis, and small-pox. In each section there is usually a brief history of research in the disease, principal symptoms, modern methods of treatment, and possibilities for advancement of treatment. The terminology of the book is understandable by the layman, and there are bits of humor scattered throughout the discussion.

Miss Hill aptly dedicates this work "to our armed forces wherever they are."

MARJORIE M. TOMPKINS

LEWIN, PHILIP. *Backache and Sciatic Neuritis. Back Injuries—Deformities—Diseases—Disabilities. With notes on the Pelvis, Neck and Brachial Neuritis.* 745 pp., illus. Philadelphia, Lea & Febiger, 1943, $10.00.

Backache is a symptom so common as to be familiar to every practitioner of medicine. Still it is one which frequently defies exact diagnosis and for which only symptomatic treatment is provided. A complete and comprehensive discussion of the subject will be a welcome addition to any doctor's library. In 45 chapters, 235 illustrations and 745 pages the author has attempted to provide such a book. Despite the fact that he has omitted very little, he has left much to be desired.

The introductory chapters are the best with a discussion of anatomy, embryology and physical examination of the back. The chapters on the intervertebral disc syndrome and on sciatica are long and detailed giving a clear

and adequate picture of the condition, description of examination necessary for the diagnosis and the detailed treatment. The illustrations throughout the book are well chosen and add much to the understanding of the problems discussed.

In his attempt to be generous with credit the author has included many references and has frequently quoted long passages from many authors, often several on the same subject. The result is a book which is unduly long, confusing in parts and somewhat lacking in emphasis. In trying to be complete he has wandered far from the subject indicated by the title and has included a textbook on operative orthopedic surgery of the spine. The book loses some of its value for the average doctor by including such details of routine surgical technique as asepsis, the tying of surgical knots, dextrose injections and the use of cadaver blood for transfusions.

The chapters on arthritis are particularly unfortunate. The author has confused generalizations applicable to arthritis of the peripheral joints with the particular case of arthritis of the spine. He has failed to distinguish between hypertrophic and atrophic types of arthritis of the spine in his discussion of the etiological factors, precipitating factors and pathological changes. He describes at great length the distinction between Marie-Struempell and the Bechterew types of vertebral arthritis including a table by Frankel contrasting the two types. He does not state that Frankel's study appeared about the turn of the century. Modern informed opinion considers these two diseases as one and the same. This rather confused description is of no help to the reader uninformed on this subject.

There are many careless statements throughout the book. The author believes that rectal administration of sodium salicylates gives quicker relief than oral use. "The patient with erect carriage thinks better." "Man was not intended to walk upright." Two pages on gout entitled, "Hench's goutograms" are included without any explanation as to how often or in what manner gout involves the back. The author states his reasons for including this material are based on clinical experience rather than technical accuracy.

The value of the book is greatly depreciated by the type of material of which the above is a running example. The book suffers from lack of discrimination in the selection of subjects. It gives the impression of having been carelessly compiled, poorly organized and hastily written. A little more care in the planning and final revision might have produced a book more nearly worthy of the tremendous amount of work expended upon it.

ROBERT M. STECHER, M.D.

WINN, RALPH B., Ed. *Encyclopedia of Child Guidance*. 456 pp. New York, The Philosophical Library, 1943. $7.50.

Some fifty psychiatrists, educators and social workers have joined in writing this book that deals in all phases of child training. It is a volume of value to anyone desiring the psychiatric definitions of the terms used in this profession. There are many references following most of the definitions for further study of the particular term under discussion. Each word or phrase is signed by the author defining it.

MARY BERNSTEIN

Sotheran's Price Current of Literature, Catalogue (No. 872, 1944) of second-hand works on MEDICINE, SURGERY, & PHARMACOLOGY issued by Henry Sotheran, Limited, 2, 3, 4 and 5, Sackville St., Piccadilly, London, W.1. has been received. This 76 page pamphlet offers many good items.

The attention of Medical Librarians is directed to War Department Technical Bulletin, TB MED 9, *Penicillin.* The purpose of this communication, issued on Feb. 12, 1944, is to acquaint medical officers with the handling, dosage, and administration of penicillin, as well as with the present indications for the drug, and the directions in which the future development of its use now appears most promising.

A Handbook of Medical Library Practice (Chicago, American Library Association, 1943) is now in its second printing. The first printing of 1000 copies was exhausted by December 1, 1943. The second printing (500 copies) has been selling well and librarians who have not already done so are urged to place their orders soon. The large sale the book is having is a tribute to the fine work of the contributors and of the able editor, Janet Doe.

OTTO H. RANSCHBURG, 200 West 57th St., New York 19, New York, has recently issued Catalogue No. 4, Medicine. This includes many important historical books including the first English edition of William Harvey's *Anatomical Exercitations Concerning the Generation of Living Creatures* (1653), Leonhart Fuchs' *De Historia Stirpium Commentarii Insignes,* first edition in Latin (1542), Robert Hooke's *Micrographia: or Some Physiological Descriptions of Minute Bodies Made by Magnifying Glasses . . .* (1665), and Andreas Vesalius's *De Humani Corporis Fabrica* (ed. 2, 1555).

New Journal

The *Journal of Neurosurgery* has recently published its first number (v. 1, no. 1, for January, 1944). This is being issued bi-monthly for the Harvey Cushing Society by Charles C Thomas, 220 East Monroe Street, Springfield, Illinois. There has long been a need for a journal in English covering this subject, the only journal in this field being the *Zentralblatt für Neurochirurgie.* The first issue contains many important articles including a review of Harvey Cushing's contributions by Gilbert Horrax, an account by Franc D. Ingraham and Orville T. Bailey of the use of products prepared from human fibrinogen and human thrombin, and a report on the lucite calvarium, a method for direct observation of the brain, by Lt. Hunter Shelden, U.S.N.R. and others. Librarians who have not already done so are urged to see that their libraries subscribe to this important journal in time to secure the first numbers.

Tillman Brieseth has been appointed acting director of Paul B. Hoeber, Inc., medical book department of Harper & Brothers, in the absence of Paul B. Hoeber, who enlisted in the U. S. Navy early in 1942. Mr. Brieseth has been in the trade advertising department of Harpers since 1941, and for the past two years has been in charge of advertising and promotion for the medical book department.

To encourage the writing of books on medical subjects for the laymen, the W. W. Norton Co. has announced the Norton Award of $3,500 for a book to be published in 1945. Manuscripts must be submitted not later than December 31, 1944. The contestants must be professional workers in the field of medicine; medical librarians are eligible. The subject matter may be autobiography, biography, history of any phase of medicine, or exposition of recent developments in medical research and practice.

The Williams & Wilkins Company has announced the establishment of The Passano Foundation, Inc., "for scientific and educational purposes, particularly to provide for scientific research and to make awards for meritorious achievement in scientific research." The Foundation is named in honor of E. B. Passano, chairman of the board of Williams & Wilkins. Among the directors of the Foundation are Dr. Emil Novak and Dr. George Corner. The Foundation plans to establish an annual award, not to exceed $5,000, for the outstanding contribution to the advancement of medical science made within the year by an American citizen.

Our Contributors

MILDRED R. CROWE is Medical Librarian of the Chattanooga, Tennesse, Public Library. She is a graduate of the University of Chattanooga and was formerly Director of City School and Community Library Branches and Extensions of Chattanooga. Mrs. Eileen R. Cunningham aided Miss Crowe in her knowledge of Library Practice.

EILEEN R. CUNNINGHAM is Librarian, School of Medicine, Vanderbilt University, Nashville, Tennessee. Prominent in the library world, Mrs. Cunningham is very active in the affairs of our association. She is at present Chairman of its Committee on Periodicals and Serials Publications and in 1935 represented this committee at the International Congress of Libraries and Bibliography held in Madrid, Spain. Mrs. Cunningham is also an enthusiastic member of the American Library Association, the Special Library Association, and the American Association of the History of Medicine. She is especially esteemed by ther fellow librarians for her splendid work as Chairman of the Subcommittee on the Production and Cost of Books and Periodicals of the International Federation of Library Associations. Mrs. Cunningham is the author of *A Classification for Medical Literature* (Ed. 2. Nashville, Cullom and Ghertner, 1937) and of numerous papers on library science. Her most recent contribution appears in the *Handbook of Medical Library Practice* (A.L.A., 1943) entitled "Reference Work, including an Annotated List of Reference Books."

FLORENCE HARDEN is Technical Librarian for Corsan Products, Inc., Research Laboratories, Flushing, New York. She was formerly librarian at the School of Veterinary Medicine at the University of Pennsylvania. Miss Harden is at present working on a catalog of motion pictures on veterinary medical subjects.

MAJOR GENERAL NORMAN T. KIRK is the 26th head of the Medical Department of the Army counting from the time of Benjamin Church who became the chief of our Hospital Department during the Siege of Boston in 1775. It is not too much to say that he is among the scant half dozen of our Surgeons General who have attained the highest professional distinction. General Kirk entered the Medical Corps in 1912

and early exhibited a fondness for surgery. After the close of hostilities in the first World War, he headed the Amputation Service of the Medical Department under Colonel Keller, and his work attracted attention throughout the world. It is unlikely that any American surgeon had a greater experience or made better use of it. General Kirk continued in general and orthopedic surgery during peacetime and he served successively as Chief of the Surgical Service at Sternberg General Hospital, Manila, P.I., at Letterman General Hospital, and at Walter Reed General Hospital. He left Washington in 1942 to become the Commanding Officer of Percy Jones General Hospital at Battle Creek, Michigan. While there, he was promoted to be Brigadier General.

In May 1943, he was selected by the President as The Surgeon General of the Army. General Kirk is one of three officers in the history of the Regular Army Medical Department who have received the honor of election to full professional membership in the American Surgical Association. He is the author of a number of professional papers and of a textbook on amputations.

H.W.J.

FRANK PLACE is Reference Librarian, Library of the New York Academy of Medicine where he has been employed since 1905. He has contributed occasional articles to the Bulletin on vocational topics, but prefers to be known as one of the authors of the *New York Walk Book*.

WILLIAM DOSITE POSTELL is Librarian of the Louisiana State University, School of Medicine. He recently served on the Committee of the Social Science Research Council for the study of health conditions of the South. He is the Louisiana representative on the Council of the American Library Association and is the author of a short manual which serves as a text for the First year medical students in medical bibliography. For additional biographical information see this Bulletin 30:273 (April) 1942.

ELLA N. WADE is Curator of the Mütter Museum of the College of Physicians of Philadelphia. Mrs. Wade was formerly an assistant under Dr. Joseph McFarland and succeeded him as Curator in June, 1943. Dr. McFarland is now Honorary Curator.

Membership as of March 1, 1944

Honorary	5
Supporting	110
Professional	192
Library	252
Total	559

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FLEMING, MR. THOMAS P. See: Columbia University Medical Library.

FLORSHEIM MEMORIAL LIBRARY. See: Michael Reese Hospital, Lillian W. Florsheim Memorial Library.

FLOWER HOSPITAL. See: New York Medical College and Flower Hospital, Prentiss Library.

FLOYD, ADA L. See: Cleveland Medical Library Association.

FORD HOSPITAL LIBRARY. See: Henry Ford Hospital Library.

FOX, DOROTHEA. See: University of Southern California, School of Medicine Library.

FRANKENBERGER, MR. CHARLES. See: Medical Society of County of Kings and Academy of Medicine of Brooklyn Library.

FRASER, DOREEN E. See: University of Alberta Main Library.

FREDERICKS, MYRA D. See: Grosvenor (Public) Library, Medical Department.

FROHWEIN, NINA. See: State University of Iowa College of Medicine Library.

FRY, MR. ALDERSON. See: Meharry Medical College.

FULTON COUNTY MEDICAL SOCIETY LIBRARY. 875 W. Peachtree St., N.E., Atlanta, Ga. (Fay Hollis.)

FURMAN, ANNABELLE W. See: Medical College of the State of South Carolina Library.

G. F. GEISINGER MEMORIAL HOSPITAL MEDICAL LIBRARY. See: George F. Geisinger Memorial Hospital Medical Library.

GAGE MEMORIAL LIBRARY. See: Memorial Hospital, Homer Gage Memorial Library.

GARRITY, FLORENCE M. See: MacDonald Medical Library, Danvers State Hospital.

GEISINGER MEMORIAL HOSPITAL MEDICAL LIBRARY. See: George F. Geisinger Memorial Hospital Medical Library.

GEORGE F. GEISINGER MEMORIAL HOSPITAL MEDICAL LIBRARY. Danville, Pa. (Thelma May Feeman.)

GEORGE WASHINGTON UNIVERSITY MEDICAL LIBRARY. 1335 H. St., N.W. Washington D.C. 5 (Shirley Harrod, Medical Librarian; John R. Mason, University Librarian.)

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE LIBRARY. 3900 Reservoir Rd., Washington, D.C. (Margaret O'Byrne.)

GEORGIA UNIVERSITY. See: University of Georgia. Medical Department Library.

GILBERT, MRS. MARGARET B. See: St. Louis County Medical Society Library.

GLEN LAKE SANATORIUM MEDICAL LIBRARY. Oak Terrace, Minn. (Miss Myrtle Stubkjaer.)

GOLDSTEIN, GERTRUDE. See: Beth Israel Hospital (Boston) Library.

GRAHAM, MRS. GLADYS WILMOT. See: St. Margaret's Hospital Memorial Medical Library.

GRANGER, HAZEL M. See: Los Angeles County Medical Association Library.

GRANT, MRS. L. M. See: Robert Packer Hospital, Guthrie Clinic Library.

GREEN, ALICE M. See: Sedgwick County (Kansas) Medical Society Library.

GREENBAUM, JENNIE R. See: Michael Reese Hospital, Lillian W. Florsheim Memorial Library.

GREENVILLE GENERAL HOSPITAL LIBRARY. Greenville, S.C. (Jessie L. Pickett.)

GROSVENOR PUBLIC LIBRARY, MEDICAL DEPARTMENT. 383 Franklin St., Buffalo, N.Y. (Myra D. Fredericks.)

GRUNOW MEMORIAL CLINIC LIBRARY, INC. See: Lois Grunow Memorial Clinic Library.

GUTHRIE CLINIC LIBRARY. See: Robert Packer Hospital, Guthrie Clinic Library.

HAGEMEYER, MRS. HARRIETTE W. See: Washington University School of Dentistry.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF PHILADELPHIA LIBRARY. 235 N. 15th St., Philadelphia, Pa. (Mrs. Melitta Turner.)

HALL, RUTH A. See: Buffalo City Hospital Library.

HALLAM, BERTHA B. See: University of Oregon Medical School Library.

HAMILTON, ELEANOR F. See: Los Angeles County General Hospital Library.

HARLAMERT, RUTH E. See: King County Medical Society Library.

HARPER HOSPITAL LIBRARY. Detroit, Mich. (Jeanette Crawford.)
HARROD, SHIRLEY. See: George Washington University Medical Library.
HARTFORD MEDICAL SOCIETY LIBRARY. See: Walter R. Steiner Medical Library.
HARTFORD RETREAT MEDICAL LIBRARY. See: Institute of Living Medical Library.
HARVARD UNIVERSITY MEDICAL SCHOOL, LUCIEN HOWE LIBRARY OF OPHTHALMOLOGY. 243 Charles St., Boston 14, Mass. (Mrs. Ada Messenger.)
HARVARD UNIVERSITY MEDICAL SCHOOL AND SCHOOL OF PUBLIC HEALTH LIBRARY. 25 Shattuck St., Boston 15, Mass. (Anna C. Holt.)
HABANA UNIVERSIDAD. See: Universidad de la Habana Escuela de Medicina Biblioteca.
HECK, LILAH B. See: University of Oklahoma School of Medicine Library.
HELD, ROSALIE. See: Loyola University School of Medicine Library.
HENDERSON, MARJORIE. See: Long Island College of Medicine, Hoagland Library.
HENNEPIN COUNTY MEDICAL SOCIETY LIBRARY. 2000 Medical Arts Building, Minneapolis 2, Minn. (Frida Pliefke.)
HENRY FORD HOSPITAL LIBRARY. 2799 W. Grand Blvd., Detroit, Mich. (Helen E. Boyce.)
HERRMANN, DR. ALBERT E. See: Waterbury Medical Association, Castle Memorial Library.
HOAGLAND LIBRARY. See: Long Island College of Medicine Library.
HOLLIS, FAY. See: Fulton County Medical Society Library.
HOLMES C. JACKSON MEMORIAL LIBRARY. See: New York University College of Dentistry, Holmes C. Jackson Memorial Library.
HOLT, ANNA C. See: Harvard University Medical School and School of Public Health Library.
HOLT, HELEN M. See: Houston Academy of Medicine Library.
HOMER GAGE MEMORIAL LIBRARY. See: Memorial Hospital, Homer Gage Memorial Library.
HONOLULU COUNTY MEDICAL SOCIETY LIBRARY. Queens Hospital, Honolulu, T.H. (Elizabeth D. Bolles.)
HORNDLER, GERTRUDE. See: Schering Corporation Library.
HOSPITAL FOR SPECIAL SURGERY MEDICAL LIBRARY. 321 E. 42nd St., New York, N.Y. (Mrs. M. K. Barrett.)
HOUSTON ACADEMY OF MEDICINE LIBRARY. 1215 Walker Ave., Houston 2, Tex. (Helen M. Holt.)
HOWARD UNIVERSITY COLLEGE OF MEDICINE LIBRARY. 520 W. W St., Washington 1, D.C. (Mrs. Josephine G. Morton.)
HOWE LIBRARY OF OPHTHALMOLOGY. See: Harvard University Medical School, Lucien Howe Library of Ophthalmology.
HUNT, MRS. JUDITH W. See: University of Chicago Bio-medical Libraries.
HUNT, MRS. JOSEPHINE P. See: Library Bureau of the American Dental Association.
HURLEY HOSPITAL MEDICAL LIBRARY. 6th and Begole St., Flint 4, Mich. (Mrs. Sarah M. Burgess.)
HUTCHINS, MARJORIE. See: Moore, Marjorie Hutchins.
ILLINOIS UNIVERSITY. See: University of Illinois Medical, Dental, and Pharmacy Library.
INDIANA UNIVERSITY MEDICAL CENTER LIBRARY. 1040 W. Michigan St., Indianapolis, Ind. (Ruth J. McNutt.)
INDIANA UNIVERSITY SCHOOL OF DENTISTRY LIBRARY. 1121 W. Michigan St., Indianapolis, Ind.
INSTITUTE OF LIVING MEDICAL LIBRARY. 200 Retreat Ave., Hartford, Conn. (Mrs. Mary Byrne Jackson.)
INSTITUTE OF OPHTHALMOLOGY, PRESBYTERIAN HOSPITAL (N.Y.) JOHN M. WHEELER LIBRARY. See: John M. Wheeler Library, Institute of Ophthalmology.
IOWA STATE MEDICAL LIBRARY. Historical Bldg., Des Moines 19, Iowa. (Mrs. Jeanette Dean-Throckmorton.
IOWA UNIVERSITY MEDICAL SCHOOL. See: State University of Iowa College of Medicine Library.
ISRAEL HOSPITAL BOSTON. See: Beth Israel Hospital (Boston) Library.
JACKSON, MRS. MARY BYRNE. See: Institute of Living Medical Library.

JACKSON COUNTY MEDICAL SOCIETY LIBRARY. General Hospital, 24th and Cherry Sts., Kansas City 8, Mo. (Mr. Park D. Crawford.)

JACKSON MEMORIAL HOSPITAL LIBRARY. See: James M. Jackson Memorial Hospital Library.

JACKSON MEMORIAL LIBRARY. See: New York University College of Dentistry, Holmes C. Jackson Memorial Library.

JAMES M. JACKSON MEMORIAL HOSPITAL LIBRARY. Miami, Fla. (Zula Morris.)

JEFFERSON COUNTY (KENTUCKY) AND UNIVERSITY OF LOUISVILLE MEDICAL LIBRARY. 101 W. Chestnut St., Louisville, Ky. (Miss Blake Beem.)

JEFFERSON MEDICAL COLLEGE LIBRARY. 1025 Walnut St., Philadelphia, Pa. (Mr. J. J. Wilson.)

JEFFRESS, MISS ROSS. See: University of Mississippi, Rowland Medical Library.

JOANNES, EDITH. See: Abbott Laboratories Library.

JOHN CRERAR LIBRARY. 86 E. Randolph St., Chicago, Ill. (Mr. J. C. Bay.)

JOHN M. WHEELER LIBRARY, INSTITUTE OF OPHTHALMOLOGY, PRESBYTERIAN HOSPITAL. 635 W. 165th St., New York 32, N.Y. (Nora Lock.)

JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE, WILLIAM HENRY WELCH MEDICAL LIBRARY. 1900 E. Monument St., Baltimore 18, Md. (Dr. Henry E. Sigerist, Acting Librarian.)

JONES, COL. HAROLD W. See: Army Medical Library.

JORDAN, MILDRED M. See: Emory University, A. W. Calhoun Medical Library.

JUDKINS, ESTHER. See: Rockefeller Institute for Medical Research Library.

KANSAS UNIVERSITY MEDICAL SCHOOL. See: University of Kansas School of Medicine Library.

KAPPES, MARION. See: Children's Memorial Hospital.

KELLER, MRS. E. L. M. See: Columbia University. New York Post-Graduate Medical School Library.

KELLOGG (W. K.) FOUNDATION LIBRARY. Battle Creek, Mich. (Mrs. Zoe Wright.)

KENNEDY, MRS. ANNA P. See: Alameda County Medical Association Library.

KENNEDY, CATHERINE. See: Mayo Clinic Library.

KEYES, MARY. See: University of Texas School of Dentistry Library.

KING COUNTY MEDICAL SOCIETY LIBRARY. 121 Cobb Bldg., Seattle, Wash. (Ruth E. Harlamert.)

KINGS COUNTY MEDICAL SOCIETY LIBRARY. See: Medical Society of County of Kings and Academy of Medicine of Brooklyn Library.

KLINCK, DR. G. H., JR. See: Samaritan Hospital Medical Library.

KOERNER, DELLA. See: Cook County Hospital, Richard H. Jaffé Memorial Library.

KOFOID, PROF. C. A. See: University of California Protozoological Laboratory Library.

KRIEBEL, MRS. ESTELLE L. See: Temple University School of Medicine Library.

KYTE, MR. E. C. See: Queen's University Faculty of Medicine, Douglas Library.

KYTE, EVA G. See: Cincinnati General Hospital Library.

LAKESIDE HOSPITAL. Cleveland. See: University Hospitals of Cleveland Medical Library.

LANCASTER COUNTY MEDICAL SOCIETY LIBRARY. Sharp Bldg., Lincoln, Neb. (Julia C. Orr.)

LANE MEDICAL LIBRARY. See: Stanford University, Lane Medical Library.

LAWRASON BROWN MEMORIAL MEDICAL LIBRARY. See: Trudeau Sanatorium, Lawrason Brown Memorial Medical Library.

LAWRENCE, MRS. A. B. See: New York University College of Dentistry, Holmes C. Jackson Memorial Library.

LEBANON HOSPITAL ASSOCIATION OF THE CITY OF NEW YORK LIBRARY. Westchester, Cauldwell & Trinity Aves., New York, N.Y. (Rose Lehman.)

LEFEVRE MEMORIAL LIBRARY. See: New York University College of Medicine, Egbert LeFevre Memorial Library.

LEHMAN, ROSE. See: Lebanon Hospital Association of the City of New York Library.

LEICESTER, DR. HENRY M. See: College of Physicians and Surgeons, Dental Library.

LEICHTMAN, ELSIE. See: Norwich State Hospital, Medical Library.

LEMCKE, HILDEGARDE. See: St. Luke's Hospital, New York, Richard Walker Bolling Memorial Library.

LENOX HILL HOSPITAL MEDICAL LIBRARY. 111 E. 76th St., New York 21, N.Y. (Gertrude N. Finneman.)

LEVENTHAL, FREDA. See: University of Buffalo School of Medicine Library.

LEWIS, ELEANORE A. See: Massachusetts General Hospital, Treadwell Library.

LIBRARY BUREAU OF THE AMERICAN DENTAL ASSOCIATION. 212 E. Superior St., Chicago, Ill. (Mrs. Josephine P. Hunt.)

LILIENSTEIN, FANNIE. See: Morrisania City Hospital.

LILLIAN W. FLORSHEIM MEMORIAL LIBRARY. See: Michael Reese Hospital, Lillian W. Florsheim Memorial Library.

LILLY RESEARCH LABORATORIES LIBRARY. See: Eli Lilly and Company Library.

LINDSAY, MRS. A. W. See: West China Union University, College of Medicine and Dentistry Library.

LOCK, NORA. See: John M. Wheeler Library, Institute of Ophthalmology, Presbyterian Hospital.

LOIS GRUNOW MEMORIAL CLINIC, INC., LIBRARY. McDowell at 10th St., Phoenix, Ariz. (Mary Elsie Caruso.)

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE LIBRARY. Keppel St., London W.C. 1, England. (Mr. Cyril C. Barnard.)

LONG ISLAND COLLEGE OF MEDICINE, HOAGLAND LIBRARY. 335 Henry St., Brooklyn 2, N.Y. (Marjorie Henderson.)

LOS ANGELES COUNTY GENERAL HOSPITAL LIBRARY. 1200 N. State St., Los Angeles, Calif. (Eleanor F. Hamilton.)

LOS ANGELES COUNTY MEDICAL ASSOCIATION LIBRARY. Wilshire and Westlake Boulevards, Los Angeles 5, Calif. (Hazel M. Granger.) (Succeeds Barlow Medical Association.)

LOUISIANA STATE UNIVERSITY SCHOOL OF MEDICINE, AGRAMONTE MEMORIAL LIBRARY. Charity Hospital, New Orleans 13, La. (William D. Postell.)

LOUISVILLE UNIVERSITY. See: Jefferson County and University of Louisville Medical Library.

LOYOLA UNIVERSITY, COLLEGE OF PHARMACY LIBRARY. 6363 St. Charles Ave., New Orleans 15, La. (Mrs. Mary Smith.)

LOYOLA UNIVERSITY SCHOOL OF DENTISTRY LIBRARY. 6363 St. Charles Ave., New Orleans 15, La. (Elizabeth Middleton.)

LOYOLA UNIVERSITY SCHOOL OF MEDICINE LIBRARY. 706 S. Lincoln St., Chicago, Ill. (Rosalie Held.)

LUCIEN HOWE LIBRARY OF OPHTHALMOLOGY. See: Harvard University Medical School. (Lucien Howe Library of Ophthalmology.)

LUNDMAN, LAMOINE. See: Springer Clinic Library.

LUZERNE COUNTY MEDICAL SOCIETY LIBRARY. 130 S. Franklin St., Wilkes-Barre, Pa. (Dr. Lewis T. Buckman.)

LYNCH, MARY M. See: Pittsburgh Academy of Medicine Library.

M. D. ANDERSON HOSPITAL FOR CANCER RESEARCH LIBRARY. See: Anderson (M.D.) Hospital for Cancer Research Library.

MCCANN, ALICE M. See: University of Pittsburgh School of Dentistry Library and University of Pittsburgh School of Medicine Library.

MCCURDY, EMILY H. See: University of Tennessee College of Medicine Library.

MCCURDY, MRS. M. S. See: New York Hospital, Westchester Division, Medical Library.

MCDANIEL, DR. WALTON BROOKS, 2ND. See: College of Physicians of Philadelphia, Library.

MCDIARMID, DR. E. W. See: University of Minnesota Library.

MACDONALD MEDICAL LIBRARY. Danvers State Hospital, Box 50, Hathorne, Mass. (Florence M. Garrity.)

MCEACHERN, DR. DONALD. See: McGill University Faculty of Medicine, Montreal Neurological Institute Fellows' Library.

MCGILL UNIVERSITY FACULTY OF MEDICINE LIBRARY. Montreal, Canada. (Dr. R. L. Stehle.)

McGILL UNIVERSITY FACULTY OF MEDICINE, MONTREAL NEUROLOGICAL INSTITUTE FELLOWS' LIBRARY. 3801 University St., Montreal, Canada. (Dr. Donald McEachern.)

MACKAY, DR. EATON M. See: Scripps Metabolic Clinic Library.

MCNAIR, CLARA C. See: Denver General Hospital Medical Library.

MCNUTT, RUTH J. See: Indiana University Medical Center Library.

MCRAE, FLORENCE. See: Medical College of Virginia Library.

MACRINA, SISTER M. See: St. Francis Hospital Medical Library.

MALLOCH, DR. ARCHIBALD. See: New York Academy of Medicine Library.

MANITOBA UNIVERSITY MEDICAL LIBRARY. See: University of Manitoba Faculty of Medicine Library.

MARLOW, DR. F. W. See: Syracuse University College of Medicine Library.

MARQUETTE UNIVERSITY SCHOOL OF MEDICINE AND MILWAUKEE ACADEMY OF MEDICINE LIBRARY. 561 N. 15th St., Milwaukee, Wis. (Mrs. Edith Dernehl.)

MARSHALL, MRS. M. See: Northwestern University Dental School Library.

MARSHALL, MARY LOUISE. See: Orleans Parish Medical Society Library and Tulane University of Louisiana School of Medicine, Rudolph Matas Medical Library.

MARY IMOGENE BASSETT HOSPITAL LIBRARY. Cooperstown, N.Y. (Mary E. Davenport.)

MARYLAND MEDICAL AND CHIRURGICAL FACULTY. See: Medical and Chirurgical Faculty of the State of Maryland.

MARYLAND UNIVERSITY. See: University of Maryland.

MASON, JOHN R. See: George Washington University Medical Library.

MASSACHUSETTS EYE AND EAR INFIRMARY LIBRARY. See: Harvard University Medical School, Lucien Howe Library of Ophthalmology.

MASSACHUSETTS GENERAL HOSPITAL, TREADWELL LIBRARY. Fruit St., Boston, Mass. (Eleanore A. Lewis.)

MAY MEMORIAL LIBRARY. See: Willard Parker Hospital, William Ropes May Memorial Library.

MAYES, ELEANOR. See: Bowman Gray School of Medicine Library.

MAYO CLINIC LIBRARY. 102 Second Ave. S.W., Rochester, Minn. (Catherine Kennedy, Acting Librarian.)

MECKEL, C. LOUISE. See: Menninger Clinic Library, Topeka, Kan.

MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND LIBRARY. 1211 Cathedral St., Baltimore, Md. (Marcia C. Noyes.)

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA LIBRARY. 16 Lucas St., Charleston, S.C. (Annabelle W. Furman.)

MEDICAL COLLEGE OF VIRGINIA LIBRARY. 12th and Clay Sts., Richmond, Va. (Florence McRae.)

MEDICAL SOCIETY OF CITY AND COUNTY OF DENVER LIBRARY. 1620 Court Place, Denver, Colo. (Corabell Tyndall.)

MEDICAL SOCIETY OF COUNTY OF KINGS AND ACADEMY OF MEDICINE OF BROOKLYN LIBRARY. 1313 Bedford Ave., Brooklyn, N.Y. (Mr. Charles Frankenberger.)

MEDICAL SOCIETY OF THE COUNTY OF QUEENS LIBRARY. 112-25 Queens Blvd., Forest Hills, N.Y. (Mrs. Lilian Evans.)

MEEKIN, MR. H. L. See: Willis F. Pierce Memorial Hospital Library.

MEHARRY MEDICAL COLLEGE. Nashville, Tenn. (Mrs. Alderson Fry.)

MEMORIAL HOSPITAL, HOMER GAGE MEDICAL LIBRARY. Belmont St., Worcester, Mass. (Dr. Raymond W. Cutler.)

MEMORIAL MEDICAL LIBRARY. St. Elizabeth Hospital, Lafayette, Ind. (Sister M. Renata.)

MENNINGER CLINIC LIBRARY. 3617 W. 6th St., Topeka, Kan. (Miss C. Louise Meckel.)

MERANZE, DR. DAVID R. See: Mt. Sinai Hospital Library.

MERCY HOSPITAL (PITTSBURGH) STAFF LIBRARY. Pride and Locust Sts., Pittsburgh, Pa. (Harriett Stewart.)

MESSENGER, MRS. ADA. See: Harvard University Medical School, Lucien Howe Library of Ophthalmology.

METROPOLITAN HOSPITAL MEDICAL LIBRARY. Welfare Island, N.Y. (Mr. Henry M. Moss.)

METROPOLITAN LIFE INSURANCE COMPANY LIBRARY. 1 Madison Ave., New York 10, N.Y.

MICHAEL REESE HOSPITAL, LILLIAN W. FLORSHEIM MEMORIAL LIBRARY. 29th and Ellis Ave., Chicago 16, Ill. (Jennie R. Greenbaum.)

MICHIGAN UNIVERSITY. See: University of Michigan Medical School Library.

MIDDLETON, ELIZABETH. See: Loyola University School of Dentistry Library.

MINNESOTA DEPARTMENT OF HEALTH LIBRARY. Minnesota Department of Health Building, Room 308, University Campus, Minneapolis 14, Minn. (Eleanor C. Barthelemey.)

MISSISSIPPI STATE BOARD OF HEALTH LIBRARY. Jackson, Miss. (E. Louise Williams.)

MISSISSIPPI UNIVERSITY MEDICAL LIBRARY. See: University of Mississippi, Rowland Medical Library.

MOE, PHILIP S. See: University of Nebraska, College of Medicine.

MONAHAN, MRS. HELEN NORA. See: Charlotte Medical Library.

MONSON, BERNICE. See: Northwest Clinic Library.

MONTREAL NEUROLOGICAL INSTITUTE. See: McGill University Faculty of Medicine, Montreal Neurological Institute Fellows' Library

MOORE, MRS. MARJORIE HUTCHINS. See: American Medical Association Library.

MORGAN, MRS. KATHERINE H. See: Baylor University College of Medicine Library.

MORRIS, ZULA. See: James M. Jackson Memorial Hospital Library.

MORRISANIA CITY HOSPITAL MEDICAL LIBRARY. 168th St. & Gerard Ave., New York, N.Y. (Fannie Lilienstein.)

MORTON, MRS. JOSEPHINE G. See: Howard University College of Medicine Library.

MORTON, LESLIE THOMAS. See: St. Thomas's Hospital Medical School Library.

MOSS, MRS. HELEN BANKER. See: Santa Barbara Clinic Library.

MOSS, HENRY M. See: Metropolitan Hospital Medical Library.

MT. SINAI HOSPITAL LIBRARY. 5th & Reed Sts., Philadelphia, Pa. (Mr. David R. Meranze.)

MOYERS, MRS. ELLA. See: College of Medical Evangelists, White Memorial Medical Library.

MUNICIPAL TUBERCULOSIS SANITARIUM (CHICAGO) LIBRARY. 5610 North Crawford Ave., Chicago, Ill. (Julie Rupp.)

MUNK, GEORGINA A. See: University Hospitals of Cleveland, Medical Library.

MUNK, RUTH D. See: University of Manitoba, Faculty of Medicine, Library.

NATIONAL INSTITUTE OF HEALTH LIBRARY. Bethesda, Md. (Margaret Doonan.)

NATIONAL JEWISH HOSPITAL MEDICAL LIBRARY. 3800 E. Colfax Ave., Denver, Colo. (Vilma Proctor.)

NAYLOR, MILDRED V. See: Academy of Medicine of Northern New Jersey.

NEBRASKA UNIVERSITY. See: University of Nebraska, College of Medicine, Library.

NESBIT, MAUDE E. See: New York State Library Medical Department.

NEWARK CITY HOSPITAL LIBRARY. Newark, N.J. (Dr. Samuel Berg.)

NEW ENGLAND DEACONESS HOSPITAL LIBRARY. Pilgrims Rd., Boston, Mass. (Ethel May Strong.)

NEW YORK ACADEMY OF MEDICINE LIBRARY. 2 E. 103rd St., New York 29, N.Y. (Dr. Archibald Malloch.)

NEW YORK HOSPITAL, WESTCHESTER DIVISION, MEDICAL LIBRARY. 121 Westchester Ave., White Plains, N.Y. (Mrs. M. S. McCurdy.)

NEW YORK MEDICAL COLLEGE, FLOWER AND FIFTH AVENUE HOSPITALS, PRENTISS LIBRARY. 1 E. 105th St., New York, N.Y. (Dorothy B. Spear.)

NEW YORK POST-GRADUATE MEDICAL SCHOOL. See: Columbia University, New York Post-Graduate Medical School Library.

NEW YORK (STATE) DEPARTMENT OF HEALTH, DIVISION OF LABORATORIES AND RESEARCH LIBRARY. New Scotland Ave., Albany, N.Y. (Anna M. Sexton.)

NEW YORK STATE LIBRARY MEDICAL DEPARTMENT. Albany, N.Y. (Maude E. Nesbit.)

NEW YORK UNIVERSITY COLLEGE OF DENTISTRY, HOLMES C. JACKSON MEMORIAL LIBRARY. 209 E. 23rd St., New York, N.Y. (Mrs. A. B. Lawrence.)

NEW YORK UNIVERSITY COLLEGE OF MEDICINE, EGBERT LEFEVRE MEMORIAL LIBRARY. 477 First Ave., New York, N.Y. (Helen R. Bayne.)

NICHOLS, MRS. JOSEPHINE G. See: Cornell University Medical College Library.
NORFOLK COUNTY (VIRGINIA) MEDICAL LIBRARY. Medical Arts Bldg., 142 York St., Norfolk 5, Va. (Emily T. Allen.)
NORTH PACIFIC COLLEGE OF OREGON DENTAL LIBRARY. 6th & Oregon Sts., Portland 14, Ore. (Mrs. Phyllis A. Rossi.)
NORTHWEST CLINIC LIBRARY. Northwest Clinic Bldg., Minot, N.D. (Bernice Monson.)
NORTHWESTERN UNIVERSITY DENTAL SCHOOL LIBRARY. 311 E. Chicago Ave., Chicago, Ill. (Mrs. M. Marshall.)
NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, ARCHIBALD CHURCH LIBRARY. 303 E. Chicago Ave., Chicago, Ill.
NORWICH STATE HOSPITAL MEDICAL LIBRARY. Norwich, Conn. (Elsie Leichtman.)
NOYES, MARCIA C. See: Medical and Chirurgical Faculty of the State of Maryland
O'BYRNE, MARGARET. See: Georgetown University School of Medicine Library.
O'HIGGINS, MILDRED V. NAYLOR. See: Academy of Medicine of Northern New Jersey. (Mildred V. Naylor [O'Higgins].)
OHIO STATE UNIVERSITY COLLEGE OF MEDICINE LIBRARY. Hamilton Hall, Columbus 10, Ohio. (Lela Artice Sinkey.)
OKLAHOMA UNIVERSITY SCHOOL OF MEDICINE. See: University of Oklahoma School of Medicine Library.
O'LEARY, MRS. SHIRLEY B. See: Pan American Sanitary Bureau Library.
OPHTHALMOLOGICAL INSTITUTE, PRESBYTERIAN HOSPITAL (NEW YORK) JOHN M. WHEELER LIBRARY. See: John M. Wheeler Library, Institute of Ophthalmology.
OREGON UNIVERSITY MEDICAL SCHOOL LIBRARY. See: University of Oregon School of Medicine Library.
ORLEANS PARISH MEDICAL SOCIETY LIBRARY. 1430 Tulane Ave., New Orleans 13, La. (Mary Louise Marshall.)
ORR, JULIA C. See: Lancaster County Medical Society Library.
OSCAR LESEUR PROFESSIONAL LIBRARY. 4160 John R. St., Detroit 1, Mich. (Mrs. Chloe S. Brewer.)
OVER, MRS. JOSEPHINE B. See: Desert Sanatorium and Institute of Research Medical Library.
OWEN, ALLIE R. See: College of Medical Evangelists Library.
PACKER, HOSPITAL. See: Robert Packer Hospital, Guthrie Clinic Library.
PALMER, MARGARET GAYLEY. See: Evans Dental Institute.
PAN AMERICAN SANITARY BUREAU LIBRARY. Washington, D.C. (Mrs. Shirley B. O'Leary.)
PATRICK, DR. H. E. See: Youngstown (Ohio) Hospital Association Staff Library.
PEDIATRIC RESEARCH FOUNDATION OF CHILDREN'S HOSPITAL, CINCINNATI. See: Children's Hospital Research Foundation Library, Cincinnati.
PEIPING UNION MEDICAL COLLEGE LIBRARY. Peiping, China. (Mr. C. W. Taam.)
PEREZ DE LOS REYES, DR. RODOLFO. See: Universidad de la Habana. Escuela de Medicina, Biblioteca.
PERKINS, MARY N. See: Worcester Medical Library.
PHILADELPHIA COUNTY MEDICAL SOCIETY LIBRARY. 301 S. 21st St., Philadelphia, Pa. (Mrs. Robert Linn Radcliffe.)
PICKERING, ELIZABETH. See: Squibb, E. R. & Sons, Library.
PICKETT, JESSIE L. See: Greenville General Hospital Library.
PIERCE COUNTY MEDICAL SOCIETY LIBRARY. 107 Medical Arts Bldg., Tacoma, Wash. (Mrs. Blanche L. DeWitt.)
PITTSBURGH ACADEMY OF MEDICINE LIBRARY. 322 N. Craig St., Pittsburgh, Pa. (Mary M. Lynch.)
PITTSBURGH UNIVERSITY DENTAL SCHOOL LIBRARY. See: University of Pittsburgh School of Dentistry Library.
PITTSBURGH UNIVERSITY MEDICAL SCHOOL LIBRARY. See: University of Pittsburgh School of Medicine Library.
PLIEFKE, FRIDA. See: Hennepin County Medical Society Library.
POOLE, M. EDNA M. See: Academy of Medicine (Toronto) Library.

POSTELL, WILLIAM D. See: Louisiana State University School of Medicine, Agramonte Memorial Library.

PRENTISS LIBRARY. See: New York Medical College, Flower and Fifth Avenue Hospitals, Prentiss Library.

PRESBYTERIAN HOSPITAL, INSTITUTE OF OPHTHALMOLOGY. See: John M. Wheeler Library.

PRIME, L. MARGUERIETE. See: American College of Surgeons Library.

PROCTOR, VILMA. See: National Jewish Hospital Medical Library.

PUERTO RICO DEPARTMENT OF HEALTH LIBRARY. Stop 19, Santurce, P.R. (Miss Carmen M. Diaz Bonnet.)

QUEENS MEDICAL LIBRARY. See: Medical Society of the County of Queens Library.

QUEENS UNIVERSITY FACULTY OF MEDICINE, DOUGLAS LIBRARY. Kingston, Ontario, Canada. (Mr. E. C. Kyte.)

QUINE LIBRARY. See: University of Illinois Medical, Dental and Pharmacy Library.

RADCLIFFE, MRS. ROBERT LINN. See: Philadelphia County Medical Society Library.

RAMSEY COUNTY MEDICAL SOCIETY LIBRARY. 1500 Lowry Medical Arts Bldg., St. Paul 2, Minn. (Isabelle T. Anderson.)

REESE HOSPITAL. See: Michael Reese Hospital, Lillian W. Florsheim Memorial Library.

REES-STEALY CLINIC LIBRARY. 2001 4th Ave., San Diego, Calif. (Miriam Ely.)

RENATA, SISTER M. See: Memorial Medical Library, St. Elizabeth Hospital.

RESEARCH FOUNDATION LIBRARY. See: Children's Hospital, Research Foundation Library.

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RICHARD WALKER BOLLING MEMORIAL LIBRARY. See: St. Luke's Hospital, New York, Richard Walker Bolling Memorial Library.

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ROCHESTER UNIVERSITY SCHOOL OF MEDICINE LIBRARY. See: University of Rochester School of Medicine and Dentistry Library.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH LIBRARY. 66th St. and York Ave., New York 21, N.Y. (Esther Judkins.)

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RUCH, COEINA A. See: Allegheny General Hospital Medical Library.

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RUNGE, ELIZABETH D. See: University of Texas School of Medicine Library.

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